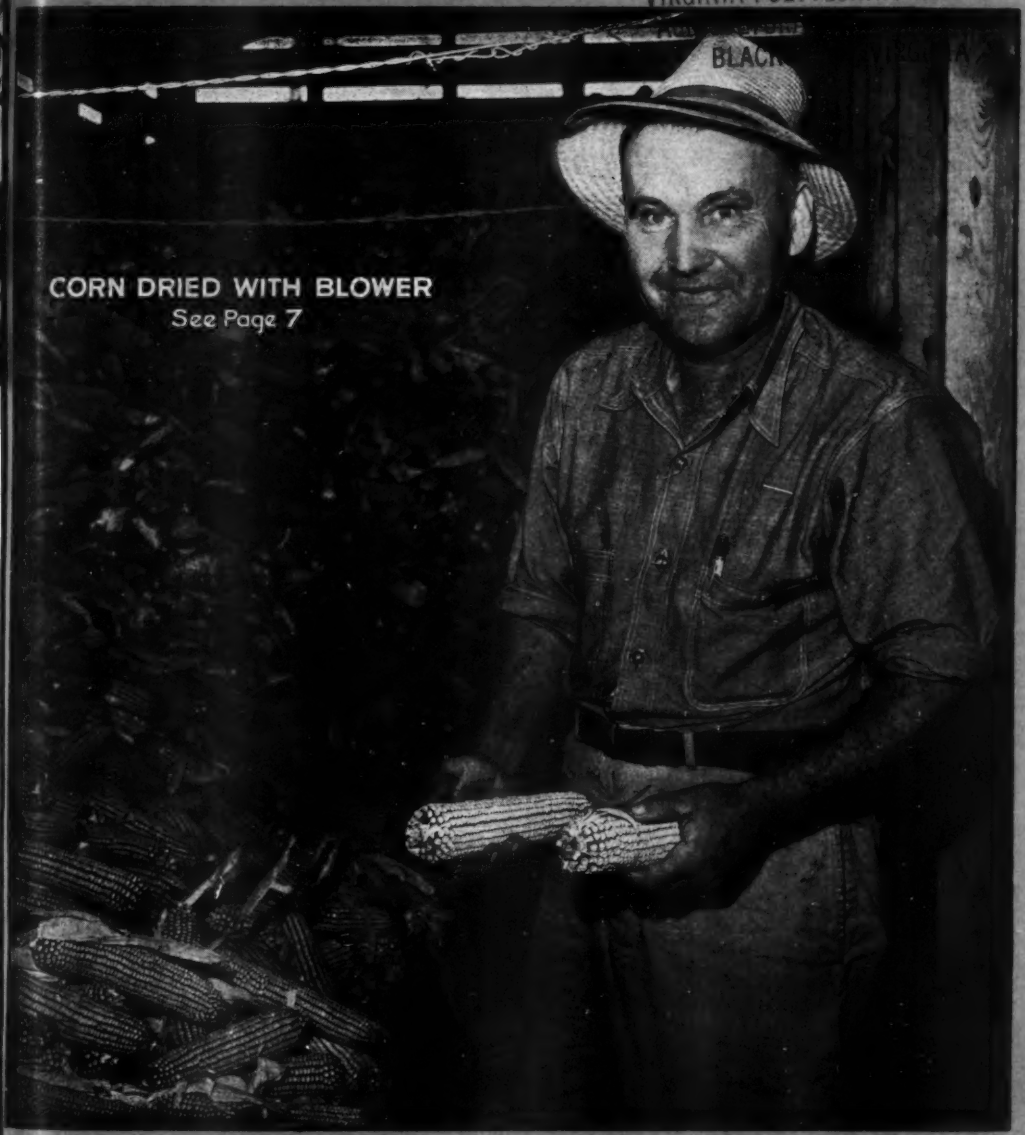
ELECTRICITY ON THE FARM *Magazine*

MARCH, 1947

Farmers Dry Corn With Blowers . . . Hay Conveyor . . . 1946 Progress in Mow Hay Finishing . . . Dairy Work Simplification . . . How to Build a Hotbed . . . Keeping Home Equipment Efficient . . . St. Patrick's Recipes

20th Year . . . . . No. 3

VIRGINIA POLYTECHNIC INSTITUTE

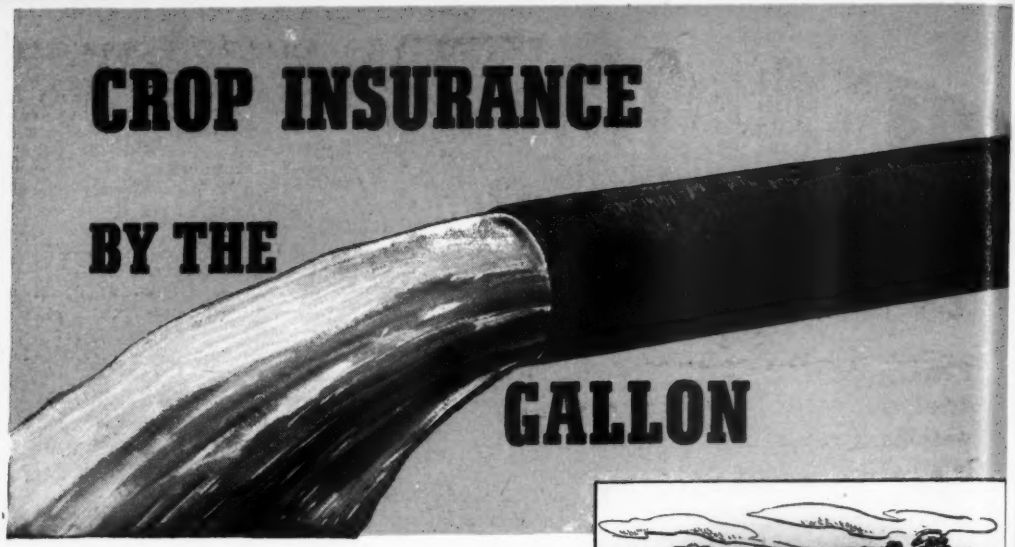


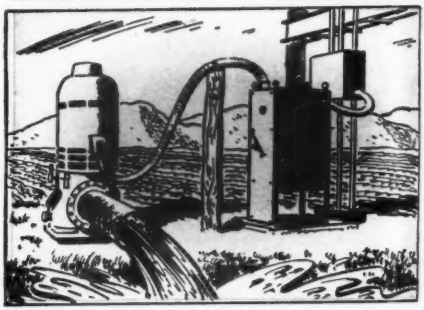
CORN DRIED WITH BLOWER

See Page 7

A CASE-SHEPPERD-MANN PUBLICATION

CROP INSURANCE BY THE GALLON





TO PROTECT precious crops, more electrically driven pumps will go into operation this year than ever before in this nation's history. Even in the so-called "humid" areas, far-sighted farmers will be prepared for that summer dry spell when thriving crops would otherwise shrivel under a hot sun and the year's income shrivel with them. These farmers know it's the bumper crop that pays over and above the cost of seed and fertilizer, equipment and labor, and they want to eliminate removable risks. That's why they choose a dependable motor-driven pump for crop insurance.

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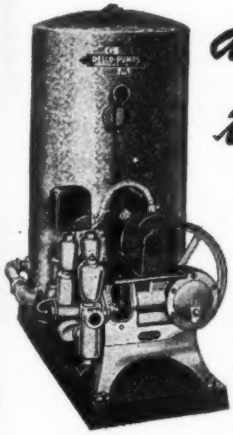

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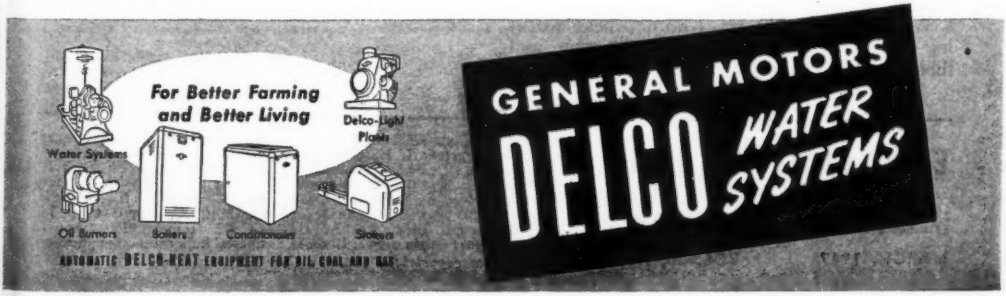

Editor's Chat

PORTAL TO PORTAL

Once more organized labor has "shown its hand." Arrogance and reckless greed without regard for the rights of others.

A Michigan judge ruled that workmen in a pottery plant are entitled to pay from the time they enter the plant until they leave it. Walking time; changing clothes. Because of that decision representatives of organized labor have brought lawsuits against other empoyers for over $5 billion in back pay.

These suits have nothing to do with the merits of portal to portal pay as a fair way to reckon wages. Possibly a miner should be paid for time getting down into the mine, or a factory worker for walking from his parking lot. Since it is quite necessary for a worker to eat nourishing food and to get some sleep in order to do a good day's work, perhaps his pay should also be based on food requirements and the number of hours he sleeps. If the wage contract is made on that basis, OK.

But this back portal to portal pay grab covers the time when wages were based on actual hours of work—the arrangement we all grew up on and understand. The pay was agreed on by the workers, unions and employers. Now labor leaders see a legal loophole, a chance to gyp employers out of $5 billions. They snicker up their sleeves and go after it like a bunch of thugs with police protection.

What does it mean? If it sticks, many businessmen and industries will be broke and go out of business. With less production, prices will again go up. The Government will have to refund some billions of dollars in income and profits taxes to employers because they did not make the income or profits. And you and I will pay for this refund in added taxes. We will also pay the higher prices.

Some people urge Congress not to be tough with organized labor. I, for one, think it is time to get tough with these professional racketeers. They need their ears batted down. They have thumbed their noses to the rest of us long enough.

When I say racketeers, I do not mean working men. Working men need protection, and their rights need to be safeguarded more than ever before. They, too, have been victimized by union leadership. Most working men are reasonable humans. They have just been lured away "on a bender."

Regardless of what the courts may decide in pending suits and appeals, these labor groups have shown their hand. It is greed, an utter disregard for fair play and a strong indication that they wish to keep the country in economic turmoil. The public pays the bill.

Congress, Don't Lay That Paddle Down!

IT MIGHT AS WELL BE SPRING

As this is written (Feb. 4) the country is covered with snow and ice and wind. You and I and the English and the people in Europe have troubles—some serious ones.

The Editor, as such, and the Business Manager have troubles, too. We have a continuous struggle to get enough paper to print our little magazine. It takes a carload a month. We like a heavier, better finished paper, but we are grateful for anything we can get. More and more paper pulp is being used for rayon, for paper cups, for special wrappers, for milk bottles. Very large publishers, caught in the squeeze, are buying paper mills in self-protection. . . . Well, we are saving scrap paper at our house.

And there are printing troubles. All printers are overworked. They have labor troubles. They cannot get new equipment.

All this makes it difficult to serve you promptly and well. It troubles us. But there are many more serious troubles in the world than paper and printing.

We have joys, too. There was that Christmas greeting card from H. S. Hogue, "an old guy (81)" from Pennsylvania who is "so pleased to get ELECTRICITY ON THE FARM" and who comments "in a political 'Chat,' you speak my language"; and the "God bless you, keep it up!" from farmer Erfurth in Wisconsin, and the many other letters from farm people who have been helped by little things we do and say. That makes us happy and warm inside.

It's Winter; but it might as well be Spring.

If there is any machinery or equipment on the farm in need of repairs or reconditioning, March is better than May. Use the shop. A bolt or a weld in time saves nine.

Geo. W. Kable

ELECTRICITY ON THE FARM

The National Magazine of Rural Electrification

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ELECTRICITY ON THE FARM Magazine

ELECTRICITY: *Versatile Energy for Many Farm Uses—Power, Light, Heat, Electronics.* Easily adapted, started, controlled: automatic. Labor doer and saver, money maker, and product improver and increaser. Used intelligently, electricity changes the whole aspect of farm life and production.

Farmers Dry Corn With Blowers

Simple Electric Drier Saves Soft Corn in Bad Years, Permits Early Harvesting for High Priced Market in Good Years. How to Do It. Costs.

Farmer Experiences in Ohio

By **DALE K. BEE**
Agricultural Engineer
Cincinnati Gas & Electric Co.

EARLY in October 1945 Raymond Carr of RFD 2, Williamsburg, Ohio, installed electric drying equipment in his corn crib. It saved him 1,000 bushels of corn. (See cover picture.)

The drying installation was simple. It consisted of a duct two feet wide and two feet high built down the center of the crib floor. The duct was covered with wire screen. At one end there was a blower that delivered outside air into the duct and forced it through the corn. No heat was used.

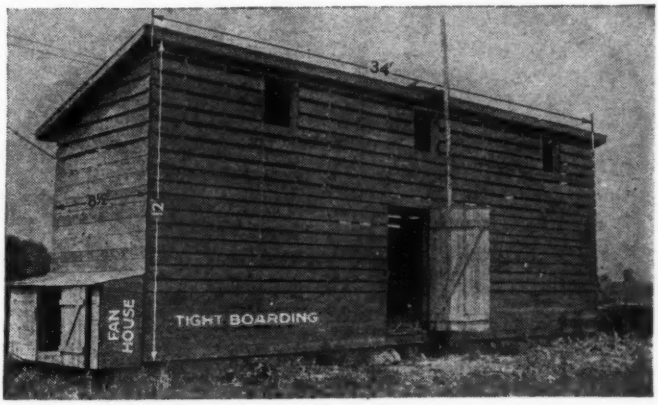
The crib in which the corn was dried was 8½′ x 34′ x 12′ high on the high side. The sides of the crib were boarded tight to a height of 3′, and on the fan end to a height of 8½′. Mr. Carr thinks he would get more efficient use of the air if the sides were boarded up to 7′.

The duct framework was made of 2 x 6's and was covered with wire fencing to support the corn. The duct was stopped 4′ from the end of the crib to prevent excessive air leakage. Six feet back might have been better.

Propeller Type Fan Used

The blowing was done with a 24″ propeller type fan direct connected to a ½ horsepower motor. The fan ran at 1750 rpm and was rated to deliver 4000 cfm (cu ft per minute) of air against a static pressure of ½″ of water. With the wire covered duct, the back pressure probably did not reach ½″. The fan cost $137 with motor. A similar fan equipped with V pulleys and belt but without motor would cost around $90. The total cost of the fan and duct system exclusive of labor was approximately $150. (All 1945 prices).

Shortly after October 1, the crib was filled with corn to a depth of 9 to 10 feet over the duct. The moisture content of the corn was high, being between 33 and 35 per cent. The fan was operated most of the time for the first thirteen days. During the first week the weather was warm and dry. Enough moisture was taken from the corn to cause it to settle 8 to 10 inches.

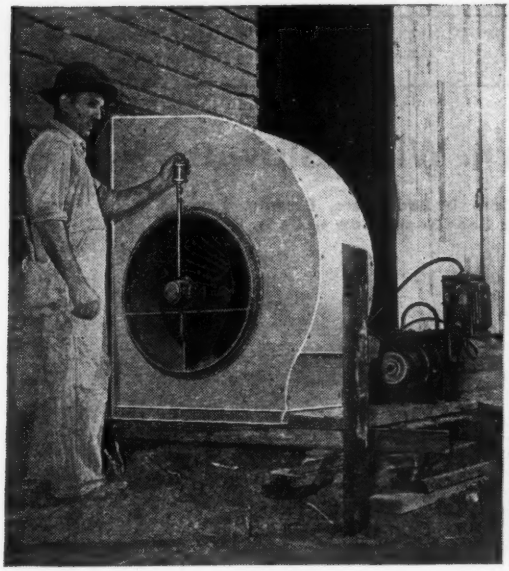


The Carr corn crib. It is 8½′ x 34′ x 12′ high in front and 10′ at the rear. The fan is attached to the end of the crib. The lean-to is for protection. The 2′ x 2′ screen-covered duct runs the length of the crib floor to within 4′ of the end of the crib. Mr. Carr thinks the tight boarding should extend up to a height of 7′.

No measurements were taken on air movements through the corn but Mr. Carr noted that the silks on the ears were being moved by the air when the fan was running.

The first crib of corn was fed out

Corn over and around the air duct. The wire covered duct offers practically no resistance to the movement of air out into the corn.



Left: Harvey Cobb and the 9,000 cfm, backwardly-curved blade blower and 5 hp motor used at the end of his corn crib. A screen was placed over the intake of this fan. The motor was also used on the hay finisher. Right: Mr. Cobb showing some of the dried corn to Claire Gsell. When the crib was full, the corn extended up above the tie-beams to the plate, a depth of 16 ft. Picture shows snow fence over "A" frames forming the air duct.

during the winter months. There was no mold in it.

Last spring another crib of corn, which had not been dried started to heat. It was moved into the crib with the fan and dried.

The cost of electricity for drying the 1000 bushels of corn was $5.62.

Mr. Carr plans to use this same crib for forcing air through combined wheat and soy beans. In good seasons for corn, the fan will also permit harvesting corn several weeks earlier. That will mean earlier marketing and more time to prepare fields for wheat.

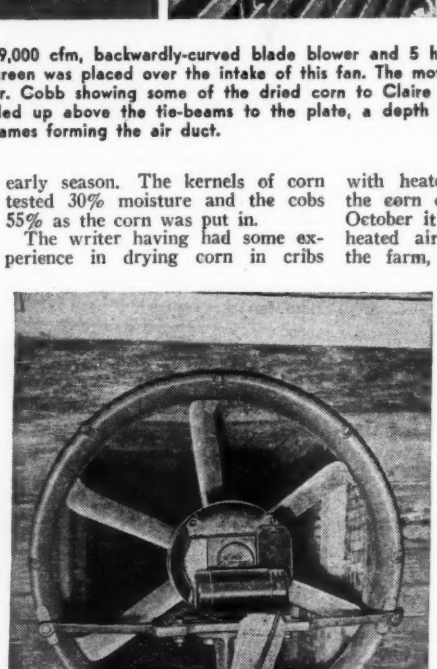
There were four other corn drier installations similar to Mr. Carr's in the Cincinnati area in 1945. All of the farmers were well pleased with results. Requests for information on how to make similar installations have come in from more than fifty farmers.

Farm Experiences in Illinois

By WILFRED E. GOULD
Agricultural Engineer
Illinois Northern Utilities, Dixon, Ill.

November is corn picking time in Northern Illinois. But last fall Merle Durward of Morrison, Illinois started ears rolling into his crib on October 7th. It was not an early season. The kernels of corn tested 30% moisture and the cobs 55% as the corn was put in.

The writer having had some experience in drying corn in cribs with heated air suggested that if the corn could be picked early in October it might be dried with unheated air. Mr. Cobb, owner of the farm, had previously installed a barn hay finisher. Based on that experience he was enthusiastic over the possibilities of the corn drier.



An "A" frame 4 ft. high was made from 2 x 4's. It was 4 ft. wide at the bottom at one end and tapered to 2 ft. at the other end. It was made of 4 ft. sections for easy removal at corn shelling time. The side of the crib in which the installation was made was 7 ft. x 40 ft. and 16 ft. high to the plate. The "A" frame was 4 ft. shorter than

The fan mounted in a hole sawed in the end boards of the Carr corn crib. It discharges directly into the screened duct, delivers 4,000 cfm of air.

the crib so the air would not be blown out the end. The frame was covered with old snow fence. Corn was put into the crib to a depth of 16 ft. Kraft paper was fastened to the sides of the crib to a height of 8 ft. above the floor line to force the air up through the corn.

Air was supplied by a used, backwardly-curved blade blower driven by a 5 hp motor. It delivered approximately 9000 cfm of air. A hole was cut in the end of the crib for the blower to deliver into the "A" frame.

As soon as enough corn was put in to cover the "A" frame, the blower was started. It was operated only on warm sunny days for a total of about 75 hours. By the end of October the moisture content had been reduced from 30% to 22%. Some of the corn near the air tunnel was down to 17%. No more blowing was done. During the month, the air temperature varied from 49° to 73° and the relative humidity from 47% to 73%.

Approximately 1900 bushels of corn were dried. The power used by the motor was 375 kw-hrs, costing a little less than ½¢ per bushel dried. Six or seven farmers in this same territory used fans in drying their corn.

Heat at 110° or less is used for drying corn for seed. Heat adds considerably to the cost of drying It was not found necessary for feed corn, particularly when the outside air was above 60° and the relative humidity below 60%.

Some of the advantages claimed for the use of the driers were:

1. It permitted early picking so the corn picker could be used on three different farms.
2. Much of the corn was down from corn-borer damage but was not yet injured by wet weather.
3. Early picking resulted in less shelling in the field and fewer husks left on the ears.
4. Early pasturing was possible.

1946 Progress in Mow Hay Finishing—Part 1

A Review of Developments in Barn Hay Finishing. Duct Systems Without Laterals; Shift to Chopped and Baled Hay; Blowers; Pressures; Supplemental Heat.

THE outstanding developments in mow hay finishing in 1946 were the simplifying of the air distribution system and the shift to chopped and baled hay. In narrow mows the lateral ducts have been done away with entirely. In wider mows slatted floors are replacing ducts. Several new and promising systems of getting air through the hay have also been devised.

These facts and many others were brought out at the Third Annual Hay Curing Conference of the American Society of Agricultural Engineers in Chicago in December. Part of the following information comes from the Conference reports, and part of it from talking with farmers and engineers who had new experiences in the past year.

Shift to Chopped Hay

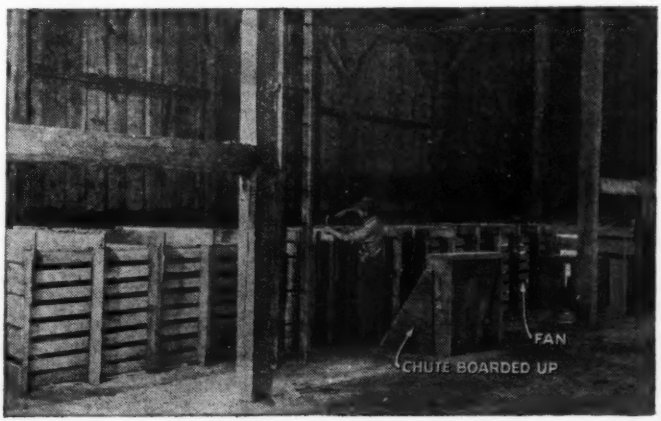
A definitely increasing percentage of mow finishers are being used for chopped and baled hay. This information comes from all sections of the country. It is not because the mow finisher works better with chopped or baled hay or that it produces better quality hay when chopped or baled. It is a matter of the labor involved in handling the hay into the mow and out of it. There has been a parallel development of new methods of handling hay in the field and in mow curing. Each one affects the other.

The reason for the popularity of chopped hay is the one-man field chopper, the electric wagon unloader, and blowers and elevators for putting the hay in the mow. Fewer men are required; there is less hand labor; very little forking. And it is easier to get the hay out of the mow.

Nearly everyone expressed a desire for choppers which will produce a longer cut—4" to 6". Hay of this length would have practically all of the advantages of shorter chopped hay and fewer disadvantages. It would handle easily, would be better feed because of less dust, and stock would like it better. Manufacturers say a longer cut than about 3" is difficult to get.

Where elevators and conveyors have been used to put chopped hay in the mow, they are liked better than blowers because they cause less separation of fine and coarse material and take less power.

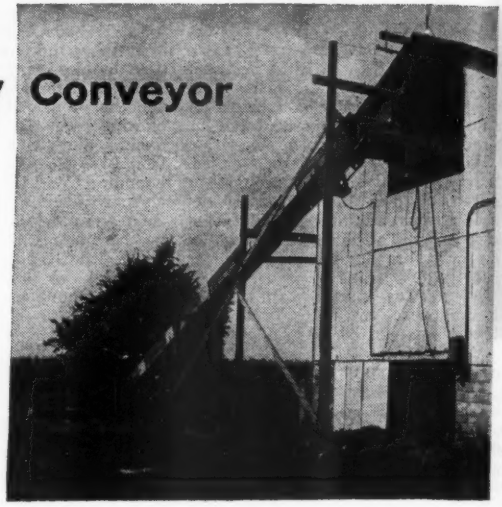
Many prefer baled hay. They like to feed it. It takes less hand labor than long hay to get it from the field into the barn. (More on page 25)



One section in a Western Pennsylvania barn equipped with a hay finisher. This section is 20 x 20 feet and 28 feet high. It has a single slatted main duct down the center. There are no laterals. Air is taken in at the end of the barn and discharged through the hay from this one main. A following article will describe this and other air distribution systems used successfully in 1946.

Chopped Hay Conveyor

By **FRED M. CRAWFORD**
Illinois Northern Utilities Co.,
Dixon, Illinois



General view of the main elevator. It is 52′ long and 24′ high at the upper end. It empties onto a horizontal belt conveyor that extends out from the mow.

THE elevation of partially cured, chopped hay and its easy distribution to an even depth and density over a mow finishing system is something of a problem. Douglas Knights, a farmer near Sandwich, Illinois, has built a conveyor system which approaches a solution.

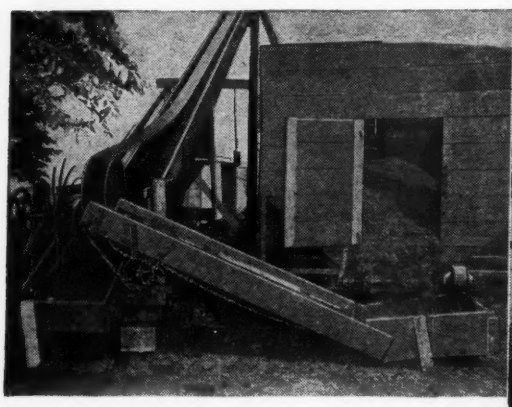
Chopped hay is brought in on a two-ton wagon having a chain conveyor in the bottom. It is unloaded from the wagon by tractor power take-off into a short conveyor-elevator equipped with chain and flights. This elevator dumps into a long elevator which carries the hay up to a horizontal conveyor in the top of the mow. From the horizontal conveyor it is deposited on the duct system. Each conveyor has its separate electric motor drive. The hay is distributed over the duct system without manual forking.

The main elevator is 52 ft long, 24 in. wide and with sides of 2 x 8's. Between the sides is a 24 in., 4-ply rubber conveyor belt which travels at a speed of 200 ft per minute. End rollers are made of 8 in. well casing on 1¼ in. shafts supported in roller bearings. Intermediate supporting rollers are made of 4 in. fence posts with ⅝ in. shafts and spaced 5 ft. apart. Support rollers for the return belt under the conveyor are 16 ft apart.

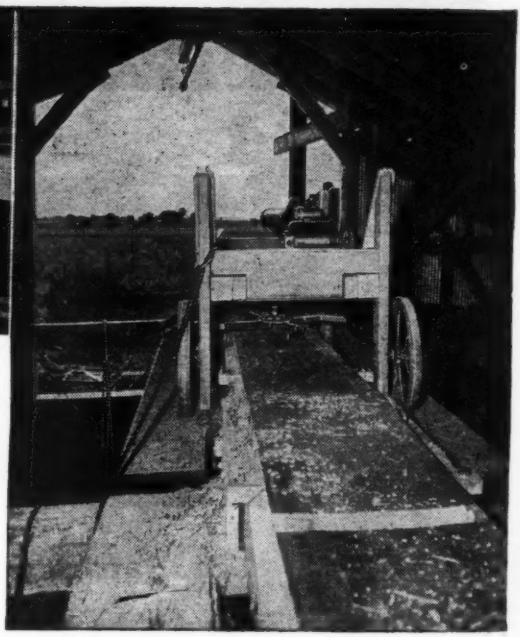
After a trial it was found that with the upper end of the elevator 24 ft. above the ground, the slope was too great for the hay to be carried up by the belt. To correct this, a hold-down belt 8 in. wide was added. It is driven by the same 2 hp motor that drives the main elevator belt, and at the same speed.

This 2 hp elevator motor also drives the short chain conveyor from the wagon. It is driven through a corn elevator loading hopper swivel gear in inverted position. The use of the swivel gear permits swinging the conveyor to the side while the wagon is driven into place for unloading.

The horizontal belt conveyor inside the band is 52 ft. long and 18 in. wide. The side pieces are below the



Above: This short chain elevator is driven by the motor on the main elevator through a swivel connection which permits swinging the short conveyor out of the way for the wagon to drive in. **Right:** The lower end of the main elevator. It shows the toothed wheel used to start the hay up the elevator and the 8" top belt used to hold the chopped hay down on the 24" conveyor.



Above: This is the 1 hp motor drive on the 52' x 18" horizontal conveyor in the mow. The motor is at the inside end of the conveyor. The conveyor belt has a speed of 360 ft per minute. Right: End view of the hay distributor mounted on wheels. It is pushed to any spot along the conveyor where it is desired to throw off the hay.

top so the hay can be pushed off the flat belt. It carries the hay without a hold-down belt. This conveyor is supported on the tie beams about 20 ft up from the ground and is driven by a 1 hp motor.

"Kicker" Paddle Distributes Hay

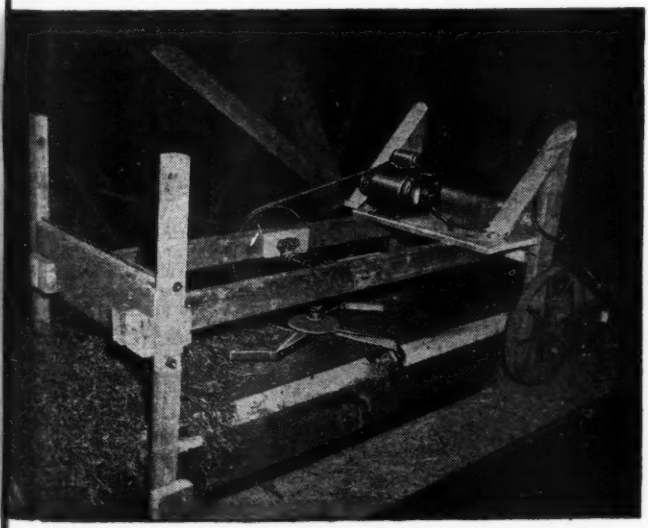
Getting the hay off the conveyor and onto the duct system also required some ingenuity. A board set at an angle across the belt as a scraper would not distribute the hay satisfactorily. A revolving 4-bladed paddle was then mounted on a vertical axle on a carriage that could be pushed along astride the conveyor. The "kicker" paddle is driven by a ¾ hp motor at a speed of 500 rpm and revolves about one inch above the conveyor belt. The hay can be thrown to either side of the barn by reversing the direction of rotation of the paddle. By moving this distributor carriage along the conveyor, the hay can be deposited at any place desired in the mow. The distributor does not separate the fine from the coarse material as is done in blowing. The hay was placed in the mow to a total depth of 18 ft.

While the description of this equipment may appear somewhat complicated, each conveyor is a rather simple machine. The operation of all of them with the three motors is simple, once the installation is made. The total motor power used is 3¾ hp, and it saved the use of an extra tractor and at least one man, which were formerly used on the blower.

Conveyor Capacity About Ten Tons Per Hour

The entire hay crop of 80 tons of alfalfa on the Knights farm was put in with this outfit in 1946. It was also used to fill a bent in the far end of the barn with chopped straw. The capacity of the conveyor, based on short tests, was about 10 tons of alfalfa per hour with only one man at the barn. In addition to saving labor and power, it accomplished the original purpose of distributing hay to an even depth and density over the entire mow floor without getting down on the hay to tramp and fork it around.

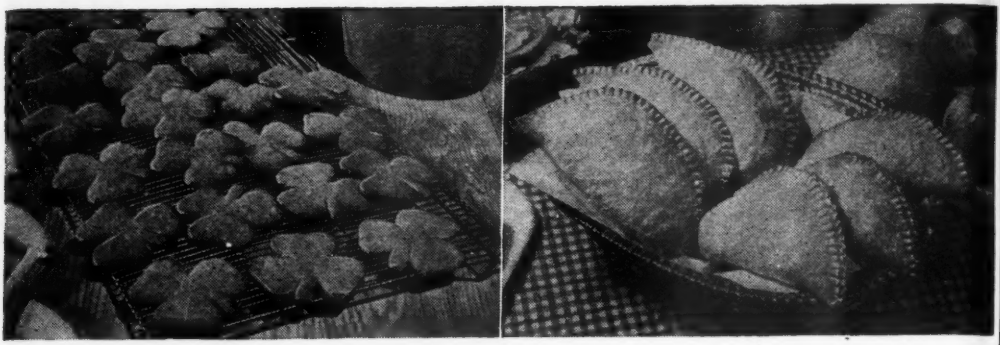
Mr. Knights' ten year old son says "it's duck soup" for him to unload hay into the mow with this system.



Side view of the hay distributor and its ¾ hp motor. Hay is thrown to either side by reversing the direction of rotation.

Electrical Housekeeping

Edited by NAN SHAW



St. Patrick's Day Recipes

REMEMBER St. Patrick's Day! It gives a lift to have an occasional surprise in the lunch box. Irish pastries and shamrock cookies make mighty fine home fare, too!

Irish Pasties

2 c. ground cooked veal	1 tsp. salt
½ c. catsup	½ c. lard
½ tsp. salt	About 6 tbsp. water
2 c. sifted flour	

Combine veal, catsup and salt. Make a pastry of the flour, salt, lard and water. Roll out to rectangle. Cut into 4 inch squares. Place ⅓ cup veal near center of each square. Fold pastry over meat to form a triangle. Press edges together with fork. Place on a baking sheet and bake in a hot oven (425°F.) about 20 minutes or until browned. Serve hot or cold. Makes 6 pasties.

Variation: In place of veal use corned beef hash, ground cooked ham or beef.

Shamrock Cookies

½ c. shortening	1¾ c. sifted flour
½ c. sugar	2 tsp. baking powder
2 tsp. grated orange rind	¼ tsp. salt
2 c. corn flakes	⅓ milk

Blend shortening and sugar together thoroughly; add orange rind. Crush corn flakes into fine crumbs. Sift flour, baking powder and salt together; mix with crumbs. Add to first mixture alternately with milk and mix well. Chill dough until firm. Roll out to about ⅛ inch thickness working with a small amount of dough at a time. Keep remainder chilled. Cut with floured cookie cutter.

Yield: 2½ dozen cookies (2 inches diameter).

Electric Baking Reduces Work

The electric oven makes baking at fixed temperatures simple and certain.

Radio Cabinet Care

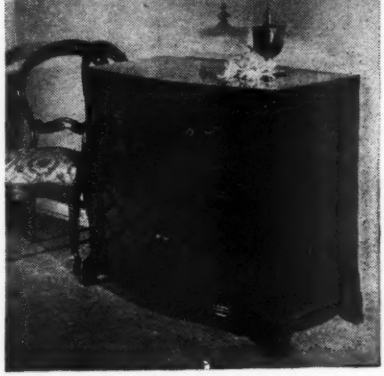
A good radio cabinet, new or old, deserves the care of fine furniture.

Good wood should be protected from sources of heat or direct sunlight or open windows. A room with 40 to 60 per cent humidity is best for the life and beauty of furniture.

Dusting with clean soft cloths—cheesecloth or old silk—to avoid scratching the surface.

Don't be afraid to clean furniture by washing it. Soak a soft cloth in warm water, put a teaspoon or so of melted pure neutral soap in the cloth, fold it into a pad and rub the wood to remove dirt and fingermarks.

Wipe off the lather with another cloth dampened in warm water. Then rub dry with a soft dry cloth, following the grain of the wood.



This seven tube combination radio-phonograph is also a beautiful piece of furniture. It is made in swirl and crotch mahogany or walnut.

If your furniture looks foggy, dampen a clean cheesecloth in a solution of vinegar water—1 tablespoon vinegar to a quart. Rub with the grain.

To polish, wring out a clean cheesecloth in hot water. When cool shake furniture polish on the cloth, and clean the wood. Then rub with a dry cloth following the grain. A wax or turpentine-linseed oil polish is a good type to use.

is "horse-and-buggy" wiring

HOLDING YOU BACK?

Do you know that your electric equipment *cannot* give satisfactory service unless your farm is properly wired? Do you know that lights, machinery, appliances, and other aids to modern farming will not give full labor-saving value unless there are enough circuits and electrical capacity to handle work loads properly? Do you know how little a well-designed wiring system costs — how much it can increase production and profits?

Do you know what to consider in planning an efficient, economical wiring system?

The G-E Farm Wiring Guide tells you in simple, easy to understand language the real facts about modern farm wiring. You don't have to be an engineer to use it, but you'll be up-to-date electrically if you do. Send for a free copy today, and find out for yourself how important good wiring can be to you.

GENERAL ELECTRIC

Section AW55-328
Appliance and Merchandise Department
General Electric Company
Bridgeport 2, Connecticut

Please send me a FREE copy of the *G-E Farm Wiring Guide*

Name_____

Address_____

City_____ State_____

Skillet Steak

"CHICKEN - FRIED steak," "Hammered steak," "Southern steak," "Swiss" steak—what do *you* call that real homemade meat dish you make with less expensive round steak, hammering it with flour, then pan-frying and serving with gravy? It tastes as good by any name, but it spells home, sweet home for that's the place to get it best. White gravy is what some like with it, but serve brown gravy if you wish and mind you, potatoes and hot biscuits go 'long with good gravy.

Allow at least a half-pound of round steak per person. You can have your meat man cube it if you like but the homemade way is to pound it yourself—with a mallet, a special meat-pounding tool, the edge of a plate or even the bottom of a sturdy bottle. The object is to break down the fibers, and at the same time, pound flour and seasonings into the meat. Then comes the frying—braising if you like yours moist, for that means liquid in the pan—until it's golden, brown and tender.

Chicken Fried Steak

2 pounds round steak
½ cup flour
2 tsp salt
⅛ tsp pepper
3 tsp lard
½ cup hot water
½ cup cream

Have steak cut 1½ inches thick. Mix flour, salt, and pepper; thoroughly pound into steak. Brown on both sides in hot lard. Add water and cream. Cover and simmer over low heat until tender, or bake in a moderate oven (350° F.) 1½ hours. Makes 6 servings.

Spanish Steak

Prepare Chicken Fried Steak substituting 2 cups canned tomatoes for water, and cream. Pour over browned steak. Bake as directed. Makes 6 servings.

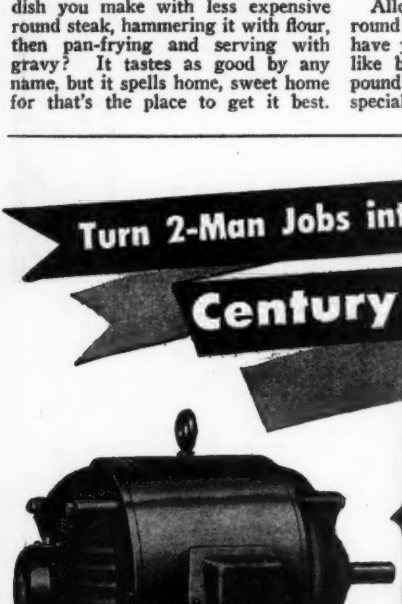
Barbecue Steak

2 pounds round steak
Salt and pepper
½ cup flour
4 tbsp lard
1 tbsp Worcestershire sauce
1 tsp dry mustard
1 tbsp dark brown sugar
⅔ cup water

Cut steak into servings (about 3" x 3" x ½"); sprinkle with salt and pepper, roll in flour. Heat lard in frying pan and brown meat on both sides. Combine remaining seasonings and 1 teaspoon salt with water; pour over meat, simmer about 1½ hours. Serves six.

Turn 2-Man Jobs into 1-Man Jobs with

Century Electric Motor Power



With the help of a Century motor many farm jobs such as feed grinding, forage cutting, corn shelling and tool sharpening can be turned into one-man jobs instead of requiring two or three men. Also, water pumping can be made automatic.

Century single phase electric motors are all-around farm motors that can take a lot of the back-breaking work out of farm chores. They can be furnished to start the heaviest loads, yet the starting current used is low. Whether for long continuous service or occasional jobs, Century farm motors furnish dependable power.

Built in sizes for all farm applications.

See your dealer or write direct for details.

CENTURY ELECTRIC COMPANY
1806 Pine Street • St. Louis 3, Mo.
Offices and Stock Points in Principal Cities

Century C MOTORS

Stretch Soap With Detergents

You can stretch your soap supply and have clean clothes, too, now that we know which fabrics wash better with the new detergents.

Experiments show that all-wool white blankets are cleaner after washing with the non-soap compounds but 75% wool and 25% cotton blankets are washed cleaner with soap. Colors in cotton and rayon printed dresses fade less when washed with the new detergents but are not cleaned as satisfactorily as with regular soap. Generally speaking, it may be that soap, because of its alkalinity, will clean rayon and the plant fibers, cotton and linen, better.

Soap and the new detergents proved equally good for washing all-wool and all-silk fabrics and silk hose. Soap cleaned cotton, linen, rayon and mixtures of cotton and wool better.

To make your soap and detergents go farther and still do the best job, collect clothes that wash best in soap for one washing, then alternate with those that wash successfully in the non-soap compounds.

Clean-Plate Habit

If you are looking for an inspiration which will get your under-age-six children into the "Clean-Plate Habit" try a nursery school practice. Here they use nested kitchen measuring spoons to serve the more solid foods and the measuring cups for liquids. By using these measures the right portions are assured for each child according to his age, eating capacity, and calories needed for each meal-time in those daily "must" foods. Small 4-ounce glasses, so easy to grip by small hands, are used for milk. The child pours from a small pitcher, the remaining 4 ounces of his milk. If the youngster wants a second serving of solid food, he serves himself with a teaspoon, from a small cereal dish.

Mealy Potatoes Sink

Detection of mealy potatoes by floating them in salt water is a Cornell University discovery. Mealy potatoes, best for baking, will sink while the good cookers float. To a six-quart pail of water add 1½ pounds of salt.

Green Mountain are the mealiest of the varieties tested, regardless of the soil, the locality, or the growing conditions. Pontiac and Erlaine No. 2 are the least mealy, so far, in this six-year test of 150,000 potatoes.

ONLY THE DE LAVAL MAGNETIC SPEEDWAY MILKER HAS THE

"MAGNETIC HEART"

THAT PROVIDES UNIFORM MILKING!

Uniform milking . . . without change from one milking to the next . . . is necessary to highest milk production levels. Variations and changes in milking speed and action in machine milking cause loss of production . . . exactly as when hand milkers are changed. Only the De Laval Magnetic *Speedway* Milker with the famous "Magnetic Heart" . . . which controls pulsations for each unit from the Pulso-Pump magnetically . . . assures that your cows will *always* be milked in the same *correct, uniform* and *regular* manner day after day. And that means highest, uniform milk yield!

THE DE LAVAL SEPARATOR COMPANY

165 Broadway, NEW YORK 6 ● 427 Randolph St., CHICAGO 6 ● 61 Beale St., SAN FRANCISCO 19

DE LAVAL

It Takes Only a Few Minutes to

Keep Equipment Efficient

But it saves hours of your kitchen time

TO rejuvenate the CAN OPENER use a small file on the cutting blade. If yours is a mechanical opener, scrub it in hot soapy water, rinse with scalding water, dry as quickly and thoroughly as possible, then add one drop *only* of sewing machine oil at joints or moving parts.

*

If the GRATER is dull, how can you have grated cheese or carrots in a jiffy for salad, school sandwiches, garnish or relish? Sharpen it up with your small round file on each cutting edge.

*

Consider the kitchen SCISSORS and add only one drop of sewing machine oil where blades are joined. Use the screw driver, too, if there is too much play in the handle, then they will do a snip-easy job of mincing parsley, stripping green peppers for salad, frozen liver for stews, left-over ham for omelette, overhanging pie dough for a tucked-in edge, refrigerator dough for rolls, and all those other quick scissor jobs.

*

Examine the rotary EGG BEATER. Bathe it thoroughly in hot sudsy water. Rinse the beater and dry in warm oven. Place one drop only of sewing machine oil where gears are joined. By all means—bring it out from the kitchen drawers, hang it on a hook and let it see daylight and so lead a safer life—free from nicks and dents. A good thing to remember about a beater is to tap it against the palm of the hand, *never the mixing bowl*, to remove clinging food at the end of a mixing job.

*

Scour all the KNIVES and sharpen them. Use a few strokes of a flat file on the edge of spatulas, cake turners, case knives, tines of cooking forks. Knife handles consider long and continued dishpan dunkings as just cause for separation from the blades and do so without warning.

*

Your wire STRAINERS request gentle brush baths in the dish pan. Dry thoroughly in warm air.

*

Scour outside only of seasoned and long used IRON SKILLETS with steel wool, soap and water. Dry thoroughly and store in a dry place. Where there are several sizes to be stacked place a piece of plain paper between. Cold water on hot pans or skillets will warp them. Always heat skillets first with a medium heat so as to prevent cracking and burning.

*

Hard water is responsible for the lime deposit which forms on the inside of TEA KETTLES. The deposit is not harmful, but it acts as an insulator so that water heats slowly. To get rid of the deposit, some simple methods may be used.

If the kettle is aluminum, it may be heated very cautiously over a slow heat when it is empty. As the metal of the tea kettle expands, the lime deposit will crack and can then be removed.

Treating with acid is another method. If the deposit is light, a dilute acid, such as vinegar, allowed to stand in the kettle will soon dissolve it. The addition of a little common salt will hasten the process. Little bubbles indicate that the deposit is dissolving in the acid. Rinse thoroughly. Fill with water and bring to a boil. Wipe the kettle dry and allow it to stand with cover off

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Look at These Features!
• Universal Motor—uses house current.
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• Comfortable, hand-fitting shape.
• Compact, close-coupled for close-corner work.
• Instant-release Trigger Switch.
• Fast-operating Jacobs Chuck.
• Powerful—Sturdy—A quality tool throughout.
Look at These Uses!
Drives twist drills up to ¼"; counter-sinks, wood drills, wire brushes, abrasive pads and sleeves.
Saves hours in repairing trucks, tractors, implements, dairy and poultry machinery, tools, harness.
Helps build and repair furniture, install hardware and fixtures, repair electrical, heating and plumbing appliances. Ask your hardware dealer for details..
ELECTRIC HOME-UTILITY TOOLS
A Product of Black & Decker
LOOK AT THIS PRICE!
$16.95
¼ inch (Capacity in steel) HOME-UTILITY Portable Electric Drill
$9.95
¼ inch HOME-UTILITY Bench Stand Only

for several hours before using.

*

Deodorize the rinsed out garbage and trash PAILS by using ½ cup washing soda to 1 gallon scalding water. Drain, scald and place uncovered pails in sun for at least 1 hour before using. This is a good weekly ritual.

*

Wipe out entire REFRIGERATOR interior with warm baking soda water, about 1 teaspoon to a quart of water. Defrost when the collected frost is less than ¼ inch on the unit of automatic refrigerators. Scald metal trays and dividers with soda water. Rotate ice trays so that beverages will not have stale flavors from long-stored ice cubes.

It is a real help if you tack up a weekly schedule of the routine you follow and to which the family is adjusted. This will give confidence to your young assistants and help them to work out their schedules with the incentive of planning for some leisure time.

Utility Containers

Jelly glasses do double duty for kitchen utility containers if they are broad, squatty and have friction-top lids. They stack easily on a steamer, oven or refrigerator rack so they are ideal for the steaming of a variety of foods at one time for children or invalids on a soft diet. Then the same stacking is good, too, for limited cold storage shelf space. Because they are of tempered glass and have smooth rolled edges, the glasses with foods can be heated, then served directly to invalid or child's tray. The lids are useful in keeping food hot or cold until eaten.

To prevent several glasses from sliding about on a tray, and to give a divided plate effect, cut out, with metal scissors, three circles from the bottom of a pie or cake tin. Press the sharp cut edges under with pliers, then invert the tin to give a firm base to support two or three glasses.

Milk and Vitamins for Girls

"Young women out of high school need as much milk as adolescents for best calcium retention and for sound bones and teeth. Three cups a day is adequate," says Dr. Genevieve Stearns, research professor of State University of Iowa. However, one quart and 400 additional units of vitamin D is the liberal amount which will insure against excess losses in case of illness. By study-

"No more carrying water for us"

For a few cents a day you, too, can have water constantly available at the turn of a faucet in kitchen, bathroom, laundry, hen-house, and garden.

A Fairbanks-Morse water system will also keep water always before your stock, automatically . . . saving men's time for jobs machines can't do . . . boosting your profits.

Farmers' experiences with Fairbanks-Morse water systems since 1919 assure your lasting satisfaction. Like all Fairbanks-Morse machines, they're honest-value products of 118 successful years of meeting farmers' needs.

Get the model that's right for you

To serve you best your water system must be the ideal type and size. The nearby Fairbanks-Morse dealer will give you unbiased advice—his line includes all types and sizes. See him soon. Fairbanks, Morse & Co., Chicago 5.

Fairbanks-Morse

A name worth remembering

Water Systems • Sump Pumps
Hammer Mills • "Z" Engines
Washers • Ironers • Windmills
Pump Jacks • Corn Shellers
Light Plants • Water Heaters

ing girls in orphanages. Dr. Stearns learned that if a girl's diet has been inferior, she cannot gain the full value from milk for 6 months. This may be a clue to the prevalence of dental decay in adolescents.

Corn That's Different

For something different in your covered dish of corn, try a little finely chopped onion—about 2 tablespoonfuls to a pint of your own home-canned corn. Instead of using milk, use the liquid from the corn and stir in ½ cupful of fine cracker crumbs, then dot with butter or margarine. Sprinkle with minced parsley just before serving.

Time Saver

Another way to save time and energy is to place utensils on lower cabinet shelves on large-sized cookie sheets. Then with waxed paper on the shelf, these metal sheets pull out like a drawer and bring into full view everything on the shelf. Store on one cookie sheet, utensils which are used at the same time: for example, the flour sifter, pastry blender, rolling pin, canvas pastry cover and favorite mixing bowl.

The mines of the U. S. have 50,000 miles of electrical haulage — more than the total for electrical railroads and street railways.

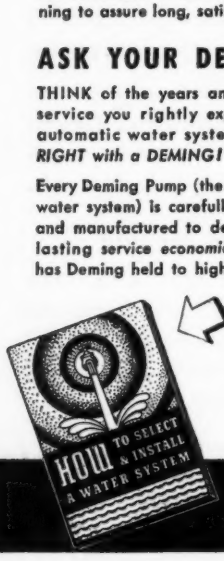
More than any other kind of electrical equipment, a modern automatic water system demands expert planning to assure long, satisfactory service at low cost.

ASK YOUR DEMING DEALER FOR ADVICE!

THINK of the years and years of service you rightly expect of an automatic water system! *Plan it RIGHT with a DEMING!*

Every Deming Pump (the *heart* of a water system) is carefully designed and manufactured to deliver long-lasting service *economically!* Why has Deming held to high standards of manufacturing for more than 66 years? Because it's *good business* to make and keep satisfied customers!

Remember, the COMPLETE Deming line gives you unsurpassed selectivity . . . hundreds of capacities from 250 to 4800 gallons per hour . . . and the right type of pump for YOUR particular well.



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THE COMPLETE LINE
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4677 — Spring - through - summer frock! Make this dress high or sunback, puff sleeve or ruffled. Jacket to match. Sizes 2, 4, 6, 8, 10. Size 6 frock, 1⅜ yards 35 inch; jacket ⅞ yards.

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Price of each pattern is 25 CENTS (in coins).

Send orders to: ELECTRICITY ON THE FARM, Pattern Department, Box 196, 243 W. 17th Street, New York 11, N. Y.

FIFTEEN CENTS more for the new Spring Pattern Book with a free-pattern printed right in the book.

Electric Hot Bed Pleases

By HELEN L. DAVIES

Early last spring Harold Neumann of near Villard, Minnesota, made an electrified hot bed. He started the seeds early, and had good sized plants by the time the danger of frost was past, or was

Harold Neumann, Villard, Minn., and the cauliflower that made him enthusiastic.

supposed to be past in this part of the country. However, Minnesota suffered a late frost, which did considerable damage to less hardy plants. Mr. Neumann had set out a large number of cabbage and cauliflower plants, but though hot bed grown, they were large and sturdy enough to withstand the frost.

When harvest time came, we again asked Mr. Neumann about the results of his experiment. He was very enthusiastic. He had cauliflower, cabbage, broccoli and tomatoes on the market far ahead of those from plants as usually grown. And they were more perfect than the average. He set out over 5,000 cauliflower plants in the spring, and nearly every plant harvested perfectly. His tomatoes were unusually large and perfect in comparison with others raised in the same territory.

Last Easter Mr. Neumann had radishes for dinner, grown in his own hot bed, which is earlier here than most people plant radishes.

Farmers account for 10 per cent of the national income in peacetime . . . and for 33 per cent of the nation's children, says a Twentieth Century Fund report.

—9m proud 9 am a farmer!—

ESCO

EMPIRE

Ensure your milk check with an Esco Milk Cooler

6 can cooler.
(Others for 2 to 27 cans.)

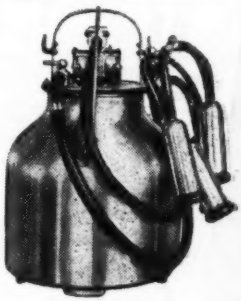
. . . Even with only one can in place the icy cold water is ABOVE THE MILK LEVEL in the can.

3 cans of night milk. Water is above milk level in all cans . . . milk will be cooled to BELOW 50° IN AN HOUR.

Three morning cans added (6 in all). Water level AUTOMATICALLY ADJUSTED. All milk cooled in one hour or less.

Diagrams show the exclusive ESCO "NI-AG-RA" automatic "water-fall" principle of cooling. Icy-bath level maintained up on necks of cans—*above the milk.*

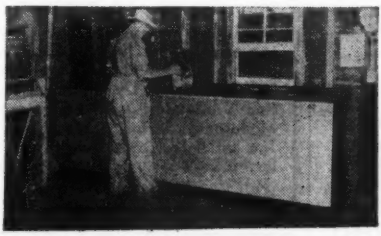
Esco is the original patented milk cooler! The Esco "NI-AG-RA" patented Neck-High Water Leveler keeps icy water well above the milk level—quickly cooling *all the milk* in the can to below 50 degrees. Get an Esco—keep bacteria count down . . . protect your reputation for quality. Thousands of dairymen have increased their profits with an Esco. For information write *Esco Cabinet Co., West Chester, Pa.*



Empire Milker —suits the cow!

Top question about a milker is, "Does the cow find it comfortable?" For only then will she give her milk freely and fast. No milker has matched the natural action of the Empire, with its patented teat-cups duplicating the action of a sucking calf. The Empire is ruggedly built and simple in design. For full information write *Empire Milking Machine Co., Division of Esco Cabinet Co., West Chester, Pa.*

Esco Farm Freezer —Locker Facilities right at home!



With this Esco Farm Freezer you can enjoy fresh meat, vegetables, fruit, all year 'round. The Esco has a separate freezing compartment and storage capacity for a year's supply. Esco Farm Freezers are built by a company that has specialized in farm refrigeration for almost two decades. Write for booklet. *Esco Cabinet Co., West Chester, Pa.*

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RITE-WAY
MILKER EVER BUILT!
Silver Anniversary Model

Only the New
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Gives you all these Advantages

YOU'RE LOOKING at easier milking . . . better milking . . . modern, fast milking! In the new Silver Anniversary Rite-Way you'll find all the advantages that have made Rite-Way so popular PLUS new and distinctive features entirely new to the milker field. See the new Rite-Way yourself. Compare! Then join the 100,000 dairy farmers who use the Rite-Way Milking Method. Write for FREE booklet on RITE-WAY FAST MILKING.

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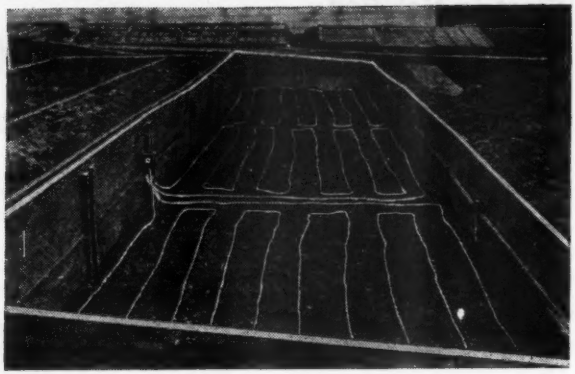
MORE MILKER FOR LESS MONEY



This shows a hotbed 6 ft wide and 18 ft long with 3-60 ft lengths of soil heating cable. One thermostat between sections will control all three. Cable will now be covered with 6 inches of good soil.

How to Build a Hotbed

Select a spot exposed to the sun and protected from winds. The south side of a building or tight hedge is good. The soil should be well drained and of suitable quality and tilth for growing plants. The site of the bed is important. Most of the heat comes from the sun. The electric heating cable just supplements the sun's heat at night and on cold or dull days. Cold winds can also waste much of the heat from the bed if it is not protected. The bed should, of course, be where it can be supplied with electricity over wires of ample size and where water is available.

Excavate the top soil to a depth of 6 inches below where you want the bed surface to be. Build the hot bed frame in the excavation being sure all corners are tight and that there is a good tight fit between the covering sash and frame.

Level the soil in the bottom of the bed carefully. Attach your hotbed thermostat to the inside of the frame near the top at one corner. Attach the wire from one end of the heating cable to the thermostat and space the cable in the bottom of the bed with strands about 6 inches apart. The opposite end of the cable should end at the thermostat where it and the thermostat can be connected to the power supply. Now return the 6 inches of top soil to the bed, covering the cable 6 inches deep.

Where soil is poorly drained, a layer of 4 or 6 inches of cinders or sand may be placed under the heating cable. If cinders are used, cover them with an inch of soil before laying the cable as the cinders may corrode the lead sheath on the cable.

Hotbed cable is used in lengths of 60 feet on 115 volt circuits and 120 feet on 230 volt circuits. The 60 feet will provide about 400 watts of heat which is enough for about 36 square feet of bed. The 120 feet will provide 800 watts or enough for about

The Right Road To Guaranteed Farm Production

Running Water under strong pressure, with taps conveniently located for easy watering of hogs, cattle, horses and chickens, guarantees 25% to 50% increased farm production. Here's Sanitation - Comfort - Fire Protection - Complete Modernization for only a few pennies a day. The initial cost of a Duro Water System costs you less today, too. See your dealer or write direct.

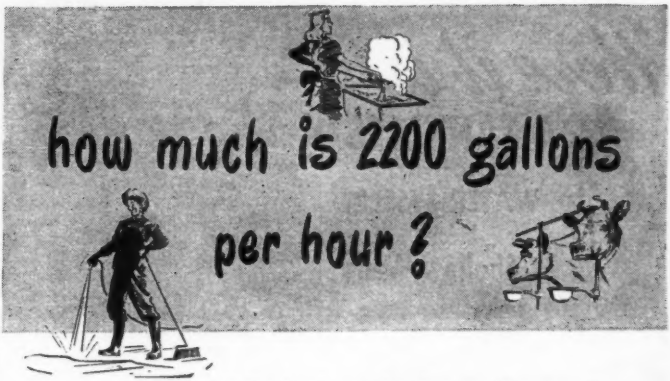
DURO WATER SYSTEMS DEALER

THE DURO COMPANY - Dayton 1, Ohio
DIVISION OF HYDRAULIC MACHINERY, INC.

72 square feet. Making the cable shorter will cause it to get hotter and use more electricity. Longer lengths will produce less heat.

Thermostats are adjustable and may be set to turn on the electricity at any desired temperature. Place the thermostat bulb just under the soil surface. Set the thermostat by holding the bulb in a pail of water of the temperature at which you want the current to come on.

Riddle of the month: WHAT is a HEDGEHOG, animal or vegetable? ANSWER: We DON'T want to start an argument BUT you'll HAVE to admit that its parents were a prickly pair. . . . Fred Allen comes up with a very appropriate name for a combination record and liquor store: "THE SWING AND SWAY SHOP." . . . WOMEN will be as PLEASING to MEN as DRINK when they LEARN to improve AS MUCH with AGE. . . . HENRY MORGAN, of radio fame, specializes in weather forecasts. One of his best: "HIGH winds followed by HIGH skirts followed by MORGAN." Another: "SHEETS of rain followed by BLANKET of snow. BED weather." . . . Once upon a time there was a farmer who made a fortune out of the wild oats on his farm. He caught a millionaire kissing his daughter. . . . Actually, there are ONLY two types of gals in the world: THOSE who TAKE you for what you ARE; and THOSE who TAKE you for what you HAVE. . . . Ma Larkey, the busy biddy of Rumor Ridge, sez: "Card playing IS expensive, but then, SO is ANY game where you HOLD HANDS." . . . BOOKWORM: (A) a PERSON who would rather READ than EAT. (B) A WORM that would rather EAT than READ. . . . MODERN GIRL: One who wants to go with every Tom, Dick, and MARRY. . . . MANY a MODERN hat is a woman's CLOWNING glory. . . . BORROWER: one who exchanges HOT AIR for COLD CASH. . . . There are just TWO sure-fire ways that a man can depend on to avoid paying alimony: He can STAY single or STAY married. . . . AMERICA: I.O.U.S.A. . . . SOME speakers have SOMETHING to SAY, others JUST HAVE to SAY SOMETHING. (John Andrew Holmes). . . . Very often when a man thinks his mind is getting broader, it's only his CONSCIENCE stretching. . . . A friend of ours was invited to a formal dinner the other evening. When we asked him for a report on the occasion he replied: "If the oysters had been as cold as the soup, and the soup as warm as the wine, and the wine as old as the chicken, and the chicken as young as the maid—boy, would I have had a WONDERFUL time!" . . . Seeya next month —DUFFY.



In only 60 minutes of "off-and-on" pumping time, the Myers one horsepower *Ejecto* system will *cheaply* give you 2200 gallons of water — all that an average farm family uses in a day. With this system you will have plenty of capacity to water all livestock, flush barn floors, do the laundry and dishes, supply baths and toilets and have thousands more gallons if needed for other uses.

Here's the system that will deliver a *full flow* at all faucets when dad, mother and the children all want a lot of water at the same time. It's always ready with an abundance of water for fire-fighting, garden-watering and other large-gallonage uses. It's for both shallow and deep well service.

See this new *Ejecto* and the complete line of Myers water systems. Ask your Myers dealer for free Jack and Jill rhyme book. The coupon will bring dealer's name and catalogs.

New "H" Series Ejecto. Capacity for shallow wells, up to 2200 gallons per hour.

TAKE OFF YOUR HAT TO MYERS
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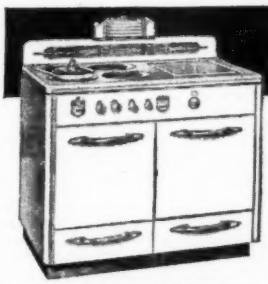

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Monarch also builds Combination Electric and Coal-Wood Ranges.

This Monarch gives you a roaster built right into the top of your Electric Range. It's an auxiliary oven in which you can cook complete meals, bake, and prepare roasts. Only Monarch offers this "Roaster Range." See your Monarch dealer now about delivery or write the factory.

MALLEABLE IRON RANGE CO. 147 Lake Street Beaver Dam, Wis.

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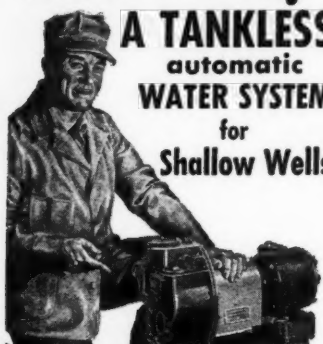


A TANKLESS automatic WATER SYSTEM for Shallow Wells

GOULDS
Balanced-Flow JET
WITH SELF-ADJUSTING CAPACITY

NOW—for the first time—the home with a shallow well can have all the advantages of city water service, furnished by this new, amazingly efficient *tankless* water system that is complete in itself.

Turn on the water—at one faucet or more than one—and the new Balanced-Flow Jet supplies the exact amount of *fresh* water you want at any or all outlets, up to the capacity of the pump.

GOULDS exclusive *self-adjusting capacity* feature delivers a full stream or a trickle, instantly, constantly, as quietly as your electric refrigerator.

Can't lose prime. No trouble. Low first cost. No tank to buy, inexpensive installation, low current consumption. Capacity up to 540 gallons an hour at five-foot suction lift.

Send for free literature.

GOULDS PUMPS INC.
SENECA FALLS, N.Y.

Dairy Work, Simplification

AT a meeting of the American Society of Agricultural Engineers held in Vermont last September, Dr. Robert M. Carter of the University of Vermont gave some good pointers on reducing work in the dairy. Dr. Carter has conducted research on farm work simplification for a number of years. He has written bulletins, made movies and spoken widely on the subject. We pass on to you some notes we made on his constructive suggestions.

On Vermont dairies 62 per cent of the dairyman's working time is spent in milking. If we are interested in reducing dairy labor, milking is the place to do it. Here are some suggestions for helping to reduce the labor of milking.

To Make Milking Easier

1. Clean out of the stable everything which has not been used in the past seven days. You may have to put some back, but there will be fewer things to walk around, stumble over and take care of.

2. Study what other farmers are doing. In Vermont we are recommending that milking be done in 2 (yes TWO) minutes per cow. It can be done. In changing milking practices we must improve milk quality as well as shorten the milking time.

3. Timeliness and regularity are important. Milk at the same time each day.

4. Remove excess and unnecessary equipment. Good equipment is necessary, but have no more of it than can be used advantageously. Do not litter up the barn with gadgets unless you are sure they will save YOU labor.

5. You will get more done if men work individually—with the spirit of competition. For example, with two men and 40 cows it is better for each man to have his own 20 cows to milk and care for than for the two men to care for the 40 cows together. In a Ford plant there is scarcely any place where two men work together.

6. In changing work patterns you should consider whether you should change the method or cut off the job entirely. You should completely eliminate hand stripping, for example.

7. Avoid adding new jobs to those being done. Frequently when you add new equipment and operations, you also add time and labor. Watch that.

8. Do not rearrange a barn until you are ready to do it. Try simple changes in doing things first. Before you start any rebuilding, lay out the barn on a small scale on paper, using match boxes, etc. for stalls and equipment. You can shift these around easily. Try different arrangements for doing the chores. Go through all the operations, then pick out the arrangement that makes the chores easiest.

Cross-walks make circular travel possible and save steps.

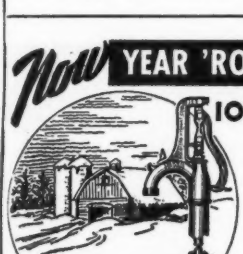
Avoid changes in level in barn floors that make you step up and down.

Two rows of cows are better than one long row to save labor.

Barn rearrangement is usually costly. Spend as little money in rearranging as possible and be sure you get a return on what you do spend. If you can save $10 per year in doing work, you are justified in spending $100 to make the change. The intangibles of personal satisfaction may constitute 90 per cent of the value of rearrangement.

—*I'm proud I am a farmer!*

Now **YEAR 'ROUND OUTSIDE WATER SERVICE**



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Have running water to your stock tank all year 'round . . . just raise the handle on the Woodford Iowa Freezeless Hydrant . . . and save time, work, MONEY!

- **"Positive" lock lever cuts off water below frost line**
- **Automatically drains hydrant case each time.**
- **Economical—simple, sturdy construction; fewer wearing parts; low upkeep.**

Easy to install on ANY farm water system. Ask your local dealer NOW, or write today for free circular

WOODFORD HYDRANT CO., Des Moines 16, Iowa

Safety in Electric Brooding

In 1945 my son built a homemade electric brooder. He either used undersized wire or left some loose connections. It resulted in a fire and we lost the brooders, brooder houses and all the chicks. We learned that one must use the correct size wires and have all cords and connections well insulated. We also learned that wires running to the brooder house should be well supported and insulated where they come through the walls. A good, stiff wind whipping the wires against the raw edges of a hole in the brooder house wall will wear off the insulation and can start a fire. We learned that from experience, too.

But we have used factory made electric brooders for some time. They have done a good job for us. We have two 500 chick size fan type brooders that we like very much.

We now watch for worn spots in the insulation of all electric cords. We keep the cords dry. I have found that if you get a shock—even a tingle—when working around the brooder or other electric equipment, something is wrong that needs to be looked after. Those short circuits can cause a fire. Our loss with the homemade brooder has taught us several things about electrical equipment. We still think that electric brooders, properly built and wired are just the thing for any poultry raiser.

MRS. ANNA SHOEMAKER,
Hammonton, N. J.

Water Heater For Milk House

A heater takes a lot of the drudgery out of farm dairying, saves time and money and helps insure that the milk and cream produced will be marketable.

A. W. Rudnick, Iowa State College dairy specialist emphasizes the need for having plenty of hot water handy in the milkhouse, because of the penalties for marketing dirty milk or cream.

Any plant which markets its products out of the state becomes subject to federal pure food laws. When inspectors find local plants accepting milk or cream which fails to measure up to standards of cleanliness, they can revoke the plant's privilege of sending its products out of the state. The effect of this would be the closing of the creamery in many cases, Rudnick says. And because of the threat, local plants will be forced to return milk which fails to meet federal standards.

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WITH A
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Farm welder
Save time and money by making your own repairs. Do the Job Right, with a Marquette Farm Welder — it's faster and easier than old fashioned drilling, bolting and patching.
Build up and hardsurface worn plow shares, disks and cultivator bits. Hitches, clevices, broken gears, sprockets, quadrants, pinions and brackets are quickly welded "good as new", ready for heavy spring work. The Marquette Farm Welder, Arc Torch and Farm Welding Rod Kit make the perfect combination for all farm welding, brazing and soldering jobs.
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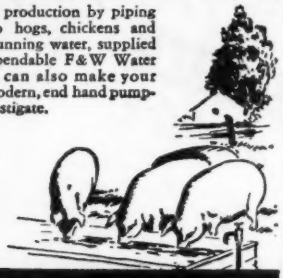
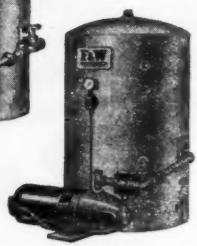
550 LBS. OF WATER FOR 100 LBS. OF PORK

Step up production by piping water to hogs, chickens and cows. Running water, supplied by a dependable F&W Water System, can also make your home modern, end hand pumping. Investigate.



F&W FARM PROVED WATER SYSTEMS

(Left) *Dependable* automatic F&W Reciprocating System. Efficient.



(Right) *Dependable* automatic F&W "Bullet" Model. No belts, gears, pulleys.

Enjoy *DEPENDABLE* Running Water

Backed by 81 Years of Farm Water Experience

In buying a water system, trust the experience of actual users. Farm families everywhere are enjoying modern water service thanks to F&W Water Systems. They know personally that F&W Systems are dependable because they benefit from trouble-free operation year after year.

F&W farm-proved Water Systems for shallow, medium and deep wells—all at full rated capacity—are the products of farm water specialists with 81 years' experience.

Ask your dealer about a dependable F&W System for your needs, or write.

FLINT & WALLING MFG. CO., INC.
KENDALLVILLE, IND.

WATER SPECIALISTS SINCE 1866

Lights Protect Turkeys

D. M. Spitzer of Broadway, Virginia has had some valuable experiences with lights on turkeys. To start with he uses lights on poults. He says they prevent crowding and smothering of the poults. Then it saves someone from going from house to house as they used to, to break up the huddles.

His most interesting use of lights, however, was in protecting the turkeys from foxes. First he bought dogs and tied them near the turkey roosts. The foxes soon learned that the dogs were tied and continued getting the turkeys. Then he used oil-burning flares. They were messy and dirty.

When he first used electric lights, he placed them close to the roosts to light the turkeys. Little birds darted around the lights, scared the turkeys off the roosts and the foxes got them in the dark corners.

The system that is being used now is to place a 250 watt reflector flood lamp at the edge of the yard and directed on the roosts. The light is kept at least 100 feet away from the roost. In the two years that these lights have been used the Spitzers have not lost a turkey. Like any remedy, Mr. Spitzer says, you do not know when it is doing any good. But you know very well when it isn't. At least they have lost no turkeys with it.

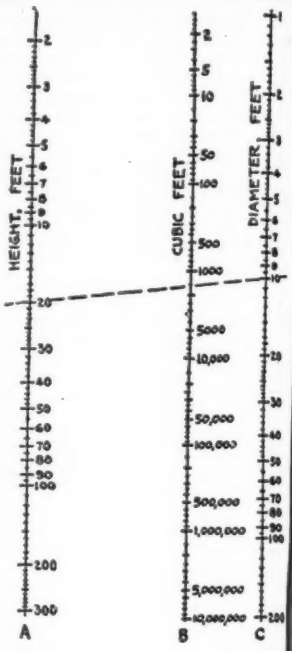
The lights are turned on about sundown. Skunks have a habit of digging around a turkey range and they scare the turkeys. The lights have also kept the skunks away.

Electric power for pumping oil wells was first used in 1892, in West Virginia.

In the United States 900 radio broadcasting stations daily serve more than 50,000,000 receiving sets.

How Much Will That Tank Hold?

Here is a chart that will be found useful and quick for determining the number of cubic feet in any vertical

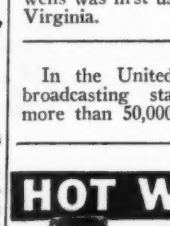


cylindrical tank from 1 to 200 ft i diameter, and from 2 to 300 ft i height.

Simply run a straight line acros the chart connecting the height o the tank with its diameter and th intersection with column B gives th number of cubic feet.

For example, if we have a tan that is 20 ft high and 10 ft in dian eter, what is its capacity? Conne the 20 ft, column A, with the 10 f

HOT WATER by the PAILFUL!



PREMIER P-20 PORTABLE ELECTRIC WATER HEATER

PRICE $16.50 Plus Tax

By merely hanging pail handle on switch arm Chromalox heat unit immersed in water goes to work producing hot water by the pailful! WITH NO HEAT LOSS . . . when pail is removed unit shuts off automatically. No pipes to connect... no fires to light!

- IT'S PORTABLE — Weighs only 6 lbs.
- LOW PRICE — Low-Cost Operation
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If Your Dealer Does Not Carry P-20 — Send Dealer's Name T

THE NATIONAL IDEAL COMPANY, Toledo 4, Oh

column C, and the intersection with the column B gives the answer as a little less than 1,600 cu ft. The columns are read in the same way that you would read an ordinary thermometer.

The chart may also be used backwards for determining the height to which a tank should be built, or the diameter it should be given to hold any number of cubic feet.

To convert cubic feet into gallons, multiply by 7.5.

To convert cubic feet into pounds of water, multiply by 62.5.

1946 Progress in Mow Hay Finishing

. . . . . (Here from page 9)

It is much easier to get out of storage and into the manger. Field balers, pick-up loaders, simple low-powered electric elevators handle the hay easily. It can be baled tight or loose. We have had less experience in curing bales in the mow than in curing long and chopped hay. So farmers are waiting to see how it turns out. Bales do have the disadvantage of scattering dangerous baling wire in the feed or troublesome twine ties in the manure.

There is still much long hay cured on mow finishers. Buck rakes help in the handling. There has been little complaint about the extra labor of handling partially cured over field cured hay. There's less dust; it is much cooler working in the mow with the blower going. There is somewhat more difficulty in getting uniformity in air resistance through long hay because of dropping heavy loads from the fork and tramping it to mow it away.

R. B. Davis of Virginia Polytechnic Institute reported that partially cured long hay and chopped hay in experimental hay finishers in Virginia had about the same weight per cubic foot at the same moisture content. That means you could get just as much long hay as chopped hay in the mow. Also that for hay of equal weight per cubic foot slightly more static pressure was built up in forcing air through long hay than through chopped hay.

The complete desirability of long vs. chopped vs. baled hay is not settled. It will not be for a long time. Probably never. It depends on the size of the farming operation, what the hay is used for, the kind of buildings, the relative costs of labor and machinery and other factors. Several things are certain. Now that we have learned to make better hay, we will never go back to the old wasteful processes. As the period of high rela-

THE "Plug-in" MILKER FOR EVERY FARM

U. S. and Foreign Patents Pending

All you need is a light socket —no pipe lines, tanks, push carts, or barn installations. Just plug in your Globe "Grand Champion" and it MILKS anywhere you have an electric outlet. Light, compact, hand portable . . . with complete power unit (motor, pump, pulsator) right on top of the pail. In addition, it gives you

12 PLUS FEATURES

for Better Milking including: exclusive 1-2-3-4 milking—massaging action for continuous milk flow, easier on cow; 1 piece milk and air tube; fingertip on-and-off control; non-creeping inflations; sanitary . . . very easy-cleaning; many other advanced features.

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Eagle ELECTRIC BARN CLEANER

Clean your barn with a push of a button—save over 400 hours a year in time and labor—increase your herd without need for extra hired help! Improve sanitation!

The Eagle Electric Barn Cleaner cleans barns in 1/10th the time it takes by pitchfork method at a cost of only 1¢ to 2¢ electric current a day — does it better!

Easily installed in any barn — new or old. Get the details — *write for folder!*

THE EAGLE MANUFACTURING CO.
414 EAST WINNEBAGO ST. APPLETON, WIS.
MAKERS OF EAGLE SILO FILLERS, CROP BLOWERS
A Division of the Four Wheel Drive Auto Company

WARNER *Electric* BROODERS

Compare! Comparison on such great farms as Creighton Bros. and Manwaring (United States), Sprucelelgh, Fisher (Canada) proves that Warner "reflected heat" saves chicks, operates economically, is easy to manage.

THERE ARE FIVE MODELS IN THE WARNER LINE.

No. 400S — 400 chick capacity, No. 200S — 200 chick capacity (illustrated at the left).

Like all Warners, equipped with convex - concave patented reflectors and Chromalox heat rings.

THE FAMOUS WARNER "DeLUXE" MODEL

Illustrated above is interior and exterior of No. 500D, first model with reflected heat, de luxe insulation, balanced ventilation and safety controlled temperature.

This model also comes in size No. 350D, for 350 chicks. Warners are safe—will not start a fire.

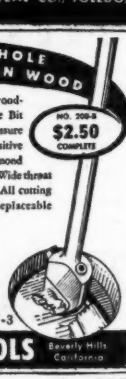
For Immediate Delivery — No. 500SM, Spacemaker. This model, illustrated at right, provides 24 extra square feet of floor space. A new companion brooder to 500D. Except for flat top and wood side walls, identical in construction and operation to the original Warner.

SEE YOUR DEALER. HE HAS WARNER ELECTRIC BROODERS OR CAN GET THEM. TAKE THIS AD AND REQUEST THE ONE OF YOUR CHOICE.

THE NATIONAL IDEAL CO., TOLEDO, OHIO

CUT Any SIZE HOLE TO Any DEPTH IN WOOD

Something new in wood-boring tools! Bruno Expansive Bit works like a lathe...requires less pressure ...actually pulls itself through. Positive lock with patented triangle blade. Diamond grind on lead screw prevents splitting. Wide throat for chip clearance. Easy-to-read scale. All cutting surfaces of high grade tool steel. Replaceable blades.



Wide Cutting Range!

No. 200-B cuts ¾" to 1¾" Diameter.
No. 201-B cuts 1½" to 3½" Diameter.
Each comes with 1 long, 1 short cutter.

Money Back Guarantee
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BRUNO TOOLS Beverly Hills California

tives agricultural prices recede, we must give increasing attention to the profit per dollar of investment in equipment. We must make equipment do more jobs.

Hay vs Grass Silage

C. B. Bender, New Jersey dairy research specialist stated that nutrients can be produced cheaper in quality hay than in grain. A ton of excellent hay will contain 1,000 pounds of digestible nutrients.

There was no question raised about the improved quality of mow finished hay. The livestock seems to have settled that question wherever it was tried. In bad hay making weather the crop was saved from rain damage or complete loss. In good haymaking weather the crop cured easily in the barn with a saving of extra leaves, green color, digestible nutrients and carotene. There was some question, however, as to whether it was better to finish the hay in the mow or to make the crop into grass silage.

Several Bureaus of the U. S. Department of Agriculture conducted a cooperative study of silage vs barn finish hay vs field cured hay at Beltsville, Md. in 1945. The crop was alfalfa containing about 15 percent of Ladino clover. The first cutting (long hay) was put on the finisher with 37.7 percent moisture and the second cutting 43.6 percent. Silage was wilted to 62.2 and 60.6 percent moisture then chopped. Heat was supplied to the first cutting of hay to raise the temperature about 40°. The 5 foot depth was cured in 4 days. The second cutting was 9 feet deep and was finished in 13 days with unheated air. Aside from a 0.66 inch rainfall on the first cutting, the field curing weather was good.

Effect of Handling on Feeding Value

	Silage	Barn Finished	Field Cured
Dry matter saved for feed			
1st cutting....	80%	83%	74%
2nd cutting...	84	79	79
Protein at feeding time			
1st cutting....	84	75	67
2nd cutting...	87	74	70
Relative milk production...	112.5	108.1	100.0

There is some question whether it would be desirable to try to produce milk on silage and concentrates without hay. But in our enthusiasm over improved methods of making hay we should not ignore the possibilities of silage.

Blowers and Pressures

Forward and backward curved centrifugal blowers, propeller, and tubaxial fans were all used successfully in 1946. All of them gave good results when used according to manufacturers instructions. Vaneaxial fans are also coming on the market for farm use. They have the axial flow fan mounted in a cylindrical tube with guide vanes to direct the air. They permit the fan to deliver air at higher pressures than other propeller types.

The tendency in 1946 was toward lower static pressures because of elimination of much of the air fric-

frost-proof HYDRANT

HANDY WATER for STOCK and FIRE PROTECTION

Galvanized iron top body and standpipe, brass lower body and working parts, lead waste included. Inlet connection for ¾" iron pipe, outlet for ¾" hose coupling. Order sizes to depth of frost where installed. For 3-ft. burial, order 5-ft. size.

$9.50

5 ft. $9.50
6 ft. 10.50
7 ft. 11.50

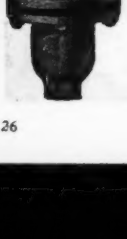
F.O.B. Phila., Pa.

ELIMINATE WATER HAMMER

IXL AIR CUSHIONED ELIMINATOR

Price $3.25 Plus shipping charges.

If you have a water-hammer condition, install this eliminator before damage is done. Bottom tapped ½" iron pipe size for hot or cold water lines.



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THE I-X-L PUMP & MFG. CO., INC.

959-961 N. 9th Street Philadelphia 23, Pa.

on in the air distribution system. These changes will be described in later article. We learned of one Wisconsin installation which developed a 2" static pressure with 15 feet of chopped hay and delivering 5 cfm per sq ft of mow area. Most other installations reported static pressures of ¾" to 1".

Supplemental Heat—Moisture

The desirability of quick curing in the mow was checked by further research in 1946. Fast finishing helps to prevent mold and reduces to a considerable extent the losses of digestible nutrients and carotene from the hay. The fast curing may be brought about through the removal of a higher percentage of moisture before putting the hay in the mow or through the use of more air or some supplemental heat.

A study reported by the Department of Agriculture showed that by field curing the hay to 32.9 percent moisture instead of 39.2 percent reduced the mow curing time from 8 days to 4.2 days; the power consumption from 53.8 kw-hrs to 6 kw-hrs per ton; the dry matter loss per ton from 199.1 pounds to 14.3 pounds; the protein loss from 3.3 pounds per ton to 21.1 pounds; and the carotene loss from 67.3 percent to 55.7 percent.

Supplemental heat was used pretty generally in Texas, and to some extent in Minnesota and a few other states. Probably 97 percent of the mow finishing was done with unheated air. Supplemental heat is desirable where humidities are high and air temperatures low.

Churning with Electric Churns

Many small electric churns have been sold throughout the country in the past ten years. The type we prefer to have a small motor which sits on top of the jar or can with the dasher extending down into the cream. In answer to our inquiry, Mr. G. R. Rew, President of the company which manufactures one of these churns, sends us this helpful information.

The churns have given good results in every state, but I am inclined to believe that you would get better results with whole milk churning such as we use in the South. Where heavy cream is churned, the temperature must be right. The USDA says that milk or cream should be warm when the churning process begins. If the cream is colder than 62° or it often is in the winter, the motor will be slowed down and churning will be retarded.

Nothing "so-so" about sewing with a SINGER!

WANT SMOOTH, easy sewing plus lifetime dependability? Then make the sewing machine you plan to buy a SINGER—favorite of farm women across the country for 95 years!

You can have one of the handsome new cabinet models—or a convenient, lightweight portable.

And you can count on Singer's precision-made parts to mean low-cost maintenance.

For your protection, remember Singer Sewing Machines are sold only through Singer Sewing Centers. *Write for the address of your nearest Singer Sewing Center.*

SINGER SEWING MACHINE COMPANY
149 Broadway, New York 6, N.Y.

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AMAZING NEW FARM TOOL!

YOU'LL find scores of time and labor-saving uses for the Tokheim Air Compressor—inflating tires, greasing car, tractor or equipment; spraying paint, insecticides, rust preventives; cleaning radiators, motors and machinery—dusting. Portable—easily carried anywhere! Just plug into electric outlet and it's ready to use. Moderately priced! Strong welded pressed steel construction. General Products Division, Tokheim Oil Tank & Pump Co., Fort Wayne 1, Indiana.

GREASES • PAINTS • SPRAYS • INFLATES TIRES • CLEANS • DUSTS

QUALITY TOKHEIM FARM EQUIPMENT

SEE YOUR IMPLEMENT DEALER OR WRITE FACTORY

"—ALMOST THE DEATH OF ME"

. . . Because a Thermostat Failed

Each year, thousands of chicks die or have their growth stunted because of thermostat failures caused by defective wafers. This simple neglect is costing poultry raisers hundreds of dollars. Such losses can be avoided by using *"Bestof All"* wafers and replacing them regularly. Don't take chances! Be sure of dependable performance and uniform heat control. Standardize on *"Bestof All"* brass wafers.

THE HEART OF EVERY BROODER

The thermostat wafer is the heart of every brooder. Why risk your profit on poorly made or inefficient wafers? Get *"Bestof All"*—strong and super-sensitive, assures poultrymen of satisfactory performance. Exclusive Beacon process.

Ask for "Bestof All" by Name
Accept No Substitute

Special Wafers Made to Order

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THERMOSTAT WAFERS

SELL GOODWILL BUILDERS

BEACON STEEL PRODUCTS CO., INC. Westminster, Md.

CLEAR
SOFT
WATER
ON YOUR FARM

saves soap, saves work, saves clothes. You can now have it at very little cost. This free booklet explains how. No obligation. Write for it.

Oshkosh Filter & Softener Co., Oshkosh, Wisconsin

EASIER • FASTER • MORE PROFITABLE with *Cyclone* Poultry Equipment

SEE YOUR DEALER or write
The CYCLONE MFG. CO., URBANA, IND.

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MARTIN VENTILATION INSURES HIGHEST QUALITY

Hay may now be cut and gathered the same day while high in moisture content. Placed in a Martin Haymaker — dried by means of a power blower — the hay is green and fragrant, retaining its leaves and full value of carotene and vitamin A. The Haymaker can be filled with chopped hay in about half the time and a third the cost of putting hay in a mow. Fire hazard eliminated.
Write for full information and literature.

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127 Longview Ave. Mansfield, Ohio

MARTIN Better FARM BUILDINGS METAL

Questions and Answers

Voltage and Wire Size

▶ **Question:** *I have a hammer mi with a 1 hp electric motor. Th wiring diagram calls for a hook on 230 volts. Have a 220 volt ci cuit for electric pump; will it b satisfactory to hook up to that ci cuit or is it necessary to run a spe cial circuit?*

How do you estimate the tota load on a circuit? I am making farm repair shop located 70 fe from meter and was wonderin which size wire to have installed fo outside line—No. 8 or No. 6?

H. I. R., Md.

▶ **Answer:** Motors and electric ap pliances marked for use on 110 o 115 volt circuits are usually designe so they will operate satisfactorily o any voltage from 110 to 125 volt Similarly, motors marked for 230 o 220 volt circuits will operate o voltages from 220 to 240 volts.

It is best to always have yo water system on a separate circuit.

To estimate the load on a circu you must know the amperes that ci cuit will carry. Motor nameplat usually have the full load amper stamped on them. Lamps and hea ing appliances are usually rated i watts. To find the number of am peres any appliance will use, divi the rating in watts by the voltage o the circuit on which it will be use For example, a 1200 watt applian on a 120 volt circuit will use 10 am peres. Add up all the amperes of th equipment which will be used at th same time and make an allowan for future expansion, and you w have the circuit load. It is usual best to use the next larger size tha that indicated because we are alway adding equipment to our electri lines.

Farm Chore Motor

▶ **Question:** *I would like to ha some information about a mot suitable to use as a portable mot about the farm. Some of the ma chines I would like to run with th motor are a corn sheller, grindsto ice-cream freezer, small tool grinde sausage grinder, and cream separat Is there any one type that would tak care of all these jobs? I know so of these machines will need to ha*

speed reducers. Do you have any plans for making these speed reducers or is it easier and cheaper to buy them. I am particularly interested in the cream separator. Is there any type of motor of ¼ or ⅓ hp that will start this load successfully through a speed reducer?

L. M. S., W. Va.

▶**Answer:** There are three types of fractional horsepower motors which may be used for general purposes on the farm. One is a general purpose split-phase motor which is probably the most common because it is the lowest in price. Another one is the capacitor start motor, and the third is the repulsion induction motor. I would recommend either the capacitor or the repulsion induction motor for general farm use. All three of these motors will run the same after they have started the load. The split-phase motor puts the heaviest load on the line in starting and may dim the lights and will not start as heavy a load as the other two types. Repulsion induction motors cost the most and are widely used in the larger sizes.

An item from our February 1944 issue on making a portable motor speed changer is enclosed. This is one of the simplest and least expensive methods of using a small motor to operate different machines at different speeds. Convenient, factory made speed reducers are now available.

I cannot give you much encouragement about running your small cream separator with a motor unless a special attachment for motor drive is made for it. You can drive the separator with a small motor if you use a large pulley on the separator and leave the crank on so you can bring the separator up to speed by hand before turning on the motor.

Electric Steam Radiators

▶**Question:** *What can you tell me about the electric radiator? Has it been developed to the point where it is safe, practical and the cost of operation consistent with the job it is given to do? Can you give me the names of reliable manufacturers?*

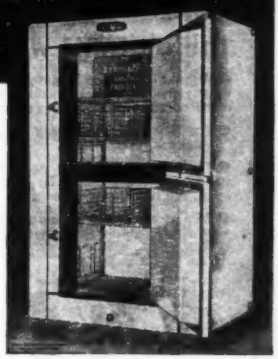
R. H. C., Va.

▶**Answer:** Electric steam radiators have been made for a number of years and judging from the new manufacturers who have gone into the business, these radiators must be popular.

The economy of operation of an electric steam radiator depends upon the cost of electricity. The radiator does not produce any more heat than the same amount of electricity would produce in a radiant heater. What

YEARS OF DAILY USE

WILSON ZEROSAFE IS TIME-TESTED



Years of daily use by enthusiastic owners of Wilson ZEROSAFE Reach-In Farm Freezers are your guarantee that the New Wilson ZEROSAFE Farm Freezers, in sizes from 15 cubic feet to 120 cubic feet capacities, are TIME-TESTED in rugged efficiency, durability, and the capacity necessary for freezing and storing adequate supplies of fresh food.

VALUABLE GUIDE FREE

Send your name and address to Dept. EF-10 today for your free copy of the Wilson GUIDE, an invaluable booklet on the production of super-quality home-frozen foods.

WILSON ZEROSAFE
Model FF-30 Farm Freezer (illustrated) will hold 1050 lbs. of food at the conservative average of 35 lbs. per cu. ft.

WILSON REFRIGERATION, INC. SMYRNA DELAWARE

John Delikat and his son Elmer, Route #1, Hales Corners, Wis.

John Delikat's experience shows you how to

make electric fencing sure and easy...

using this Prime Hi-line controller with Shock Control & Multiple Signal Lights

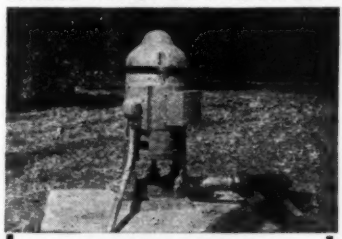
For over two years, John Delikat has used the Prime 486 Controller. He says: "We have found it 100% satisfactory. The Multiple Signal Lights tell us exactly how much shock is on the fence. The Shock Control Switch makes it possible to keep an effective shock on the fence in all weather. We never really knew how to use electric fence until we got this Prime 486. Our electric fence has saved us hundreds of dollars."

Prime delivers more shock — makes it easy to follow modern land-saving, money-making methods.

See your dealer.

THE PRIME MFG. CO., Milwaukee, Wis.

MAGIC WINGS TO WATER LIFT



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For Deep or Shallow Wells
Capacities: 600 to 3,300 G.P.Hr.

Unlike Any Other in Simplified Pumping Action

The ideal pump for a moderate capacity, low cost, uncontaminated water supply. Hi-Lift Pumps economically produce maximum water capacities from wells as small as 4" in diameter. Request Bulletin.

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Food Machinery Corp.

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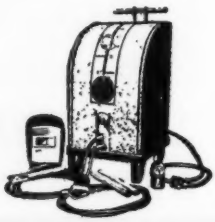
LOS ANGELES 31, CALIF.

BUILD
with the
miller FARM WELDER

- With the Miller Farm Welder you can build wagons, trailers, feed carts, milk can trucks, elevators and other labor saving devices.
- The Miller gives you *every* ampere with "Swing Lock" heat selector.
- The Miller Farm Welder meets N.E.M.A. standards and is approved for operation on R.E.A. and rural power systems.
- Stop at your dealer's store today . . . or write for full details about the Miller Farm Welder.



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SAFE MILK for Every Farm Home SAFGARD Home MILK PASTEURIZER

Now you can protect your family against the dread milk-borne diseases —undulant fever, tuberculosis, typhoid fever—by pasteurizing milk in your own home.

The SAFGARD Home Milk Pasteurizer conforms to U. S. Public Health Service requirements. Electrically operated . . . 2-gallon capacity . . . automatic time and temperature controls . . . priced low. For your family's health, pasteurize with SAFGARD.

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the radiator does is to distribute that heat over a larger surface from which the heat passes into the room through both radiation and convection, the convection current rising and setting up an air circulation.

Manufacturers of electric steam radiators include Wittie Manufacturing & Sales Company, Chicago 5, Ill., Electric Steam Radiator Corp., 6188 Twelfth Street, Detroit, Mich. and Burnham Boiler Company, Irvington, N. Y.

A new radiator that looks like a steam radiator but contains no water has just been announced by Henry J. Morton Associates, Inc., 510 Boulevard Bldg., Detroit 2, Mich. This is called the CO-Z-AIR electric radiator.

I would also call your attention to the article on page 20 of our March 1946 issue describing various types of portable heaters.

Change to Electric Water Heater. Combination Range

▶ **Question No. 1:** *We use considerable hot water on this farm. In the house we have a 30 gallon tank, heated by a small coal heater, and in our milk house we have a similar arrangement. I want very much indeed to change my method of heating to electricity instead of coal. With coal now costing* $17.00 *per ton and electricity costing me* 2.1c *per kw, I believe I might even effect a saving in operating cost, to say nothing of a great gain in convenience.*

In a current mail order catalogue a 30 gallon and a 50 gallon automatic electric water heater are listed. This heater looks as though it were what I need; but the trouble is that it is sold complete with tank. I already have the tank; all I need is the electric heating elements, thermostats, etc. Could you put me in touch with a reliable firm handling such type of merchandise? And of course I would appreciate any advice or information you might care to give me.

▶ **Answer No. 1:** You can purchase strap-on heaters for your water tank and thermostats and an insulating jacket from Hynes & Cox, Albany, N. Y.

Immersion or hairpin type heaters which are inserted through threaded openings in the side of the tank may be purchased from the General Electric Company or Westinghouse Company.

My advice to you would be to dispose of your present tank and install a complete factory-made job of water heating. A good factory-made heater will probably save the extra cost in a reasonably short time.

GENEROUS • LIVELY • SPARKLING
RUNNING WATER at LOWEST COST

with an **APCO** *Master Line* **WATER SYSTEM** (SHALLOW WELL)

WRITE for BULLETIN 112-A

You make an investment in better living and greater farm profits when you install an APCO Master-Line Unit. Operating at slow speeds (1750 R.P.M.) and with only one moving part in the pump, you are set for many years of superb water service—enough for EVERY farm need including FIRE PROTECTION. 325 G.P.H. (others up to 3000 G.P.H.) Silent operation. Instant response. Life-Time replaceable pump covers. SATISFACTION GUARANTEED.

We Also Make Deep Well Pumps

DISTRIBUTORS IN PRINCIPAL CITIES

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88 Loucks St., AURORA, ILLINOIS

HOL-DEM ELECTRIC FENCE

MODEL 65—Operates off 110 AC 60 Cycle or 6 Volt Dry or Storage Battery. Priced $9.95 and up.

Famous HOL-DEM electric fence controllers can be shipped from stock. Fastest selling controllers on the market. All types for all purposes. Low cost. Self-contained.

Good Dealer and Jobber Proposition

Write, wire or call your order in today. Catalog and prices sent on request.

ELECTRIC SERVICE SYSTEMS, INC.
1330 Quincy N.E., Minneapolis 13, Minn.

8 INCH BENCH SAW COMPLETE AS SHOWN

IMMEDIATE DELIVERY!

$24.95 F. O. B. Royersford, Pa.

TABLE SEGMENT—Shows degree of table tilt—graduated. **SPLITTER**—Hard temper cold rolled steel. **GUARD**—Aluminum. **MITER GAUGE**—Aluminum. Accurately graduated 45° each side of center. **BEARINGS**—(2) Oilite bronze. **CAPACITY**—0 to 2¼". **TABLE**—12" x 14".

SHIPPING WEIGHT—44 lbs.

AMERICAN MACHINE & TOOL CO., Inc.
DEPT. No. 567 ROYERSFORD, PA.

through a saving in electricity consumed.

Before installing any electric water heater, you should discuss the matter with your Power Company. It may be they have a special rate for water heating which will make it even cheaper than the rate you quoted. If such is the case, the company will have cert. in requirements on tank size and wattage which you should know before making the installation. I would also recommend that you buy a standard make of heater from someone who can give you service unless you are experienced in that sort of thing yourself.

▸**Question No. 2:** *Currently we run a wood-burning stove in our farm kitchen; but with farm wages now far above the old days, it has become an expensive operation. We want to replace the present stove with an electric stove; but must have heat in the kitchen as well. Would like to purchase a combination stove. Can you tell me where I might inquire about securing the combination I am seeking?*

J. M. H., Mass.

▸**Answer No. 2:** The Malleable Iron Range Company, 146 Lake Street, Beaver Dam, Wis., have been making combination fuel and electric ranges for many years. Before the war, the General Electric Company and the Hotpoint Company both made a small heating stove which was separate but which fitted up against and matched the electric range.

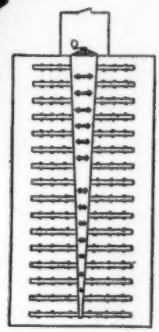
Incubator Control

▸**Question:** *I have a 100 egg incubator and don't seem to be able to keep it at 103°. It is controlled by a heat regulator but, have set the incubator three times and it does not stay at 103°. The company sent a new control to put in; asked them to explain how it works but they did not. Can you explain for me. Also want to know what the little light is for that goes on and off on top of the incubator? Would it affect it if I didn't put it in? It has a round wafer-like disc on the heat regulator. What is it for? About how much electricity will my little incubator use in three weeks? It is a 100 watt. 110 volt A. C.*

Mrs. T. C. B., Ala.

▸**Answer:** The round wafer on your heat control which is down inside of your incubator is made of thin metal and filled with a liquid which expands when it gets warm. This expansion opens the electric circuit and cuts off the current. As the incubator cools down the wafer contracts, the circuit is closed and

CURE HAY IN THE MOW FOR EXTRA PROFIT . . .

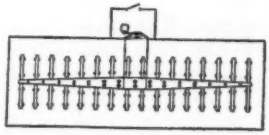


Your County Agent will tell you that hay curing (or finishing) in the mow is one of the really important advances in farm technique in recent years.

1. It practically eliminates the weather risk.
2. It prevents shattering.
3. It insures against spontaneous combustion.
4. It gives you green succulent hay — every time.
5. It increases food value.
6. It increases sales value.

Write for bulletin giving facts and figures.

Be sure of correctly designed, economically operating equipment and installation. Hartzell equipment moves maximum air per power dollar. Your nearby Hartzell dealer knows installation needs. Send for his name.



Typical installations showing fan at end of mow and fan at side of mow.

H

HARTZELL PROPELLER FAN CO.

PIQUA DIV. OF CASTLE HILLS CORP. OHIO

Take Life EASIER! GRIND YOUR GRAIN ELECTRICALLY

With A VIKING FEED GRINDER

and do a BETTER job CHEAPER

Viking saves you hours of work . . . saves you the trouble of hooking up a slippery tractor belt on cold wintry mornings . . . saves you long hauls to town or waiting for commercial grinder . . . saves you up to 90 per cent of your feed grinding bills.

Viking grinds at the flip of a switch . . . grinds for 15 cents a ton . . . grinds enough for 300 head of stock . . . grinds fresh feed every day. You get greater convenience, greater profits when you grind your grain with a Viking. Save time, save work, save money. Take the "grind" out of grinding. Take life EASIER and do a BETTER job CHEAPER by getting an efficient Viking electric hammer mill. See your dealer. If he can't supply you, write to us.

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Combination Model No. 4305 Hi-Line or Battery

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ELECTRIC FENCE CONTROLLERS

Electro-Line is built for farmers who appreciate fine farm tools — they have made it the leading brand of electric fence controllers. They choose Electro-Line because it is sturdily built for long life, has a powerful but safe intermittent shock, and low operating costs.

See your Electric-Line dealer — he has the model for you.

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RED-E-HOT ELECTRIC WATER HEATER

Have plenty of hot water at all times — for only a few cents a day. Always full — can't run dry. 10-gallon heavy gauge copper tank is permanent. Quick-heating 500-watt element, automatically controlled . . . nothing to forget. Thick insulation holds in heat. Splash-proof bowl at easy height for pouring. Write for information.

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If satisfied you pay only $1 a month until paid. 10

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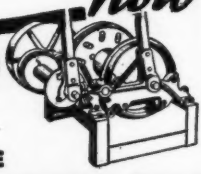

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Now is the time to buy *your* Ireland Farm Hoist. Your dealer has it . . . get yours now. It's your all-purpose, all-season "Extra Hand." Makes scores of tough jobs easier . . . winter, spring, summer, fall — year 'round. Use it to save a man and team or tractor for unloading loose or baled hay. Store feed, harvest ice, pull stumps . . . any one of a score of "back-break" jobs are easier with an Ireland Farm Hoist.

BENNETT-IRELAND, INC.
347 Marsh Street, Norwich, New York

the electric heat again turned on. This action of turning the heat on and off continues and should hold the incubator temperature at that for which the thermostat is set.

It is necessary for you to adjust this thermostat so the current will cut off when the temperature inside the incubator is just above 103°. After adjusting it you should watch the thermometer and be sure that the thermostat cuts on and off so the temperature will remain at 103°.

The little light on top of the incubator lights up when the thermostat circuit is closed and the current is on. It goes out when the current is off. The light has no effect on the operation of the incubator other than to let you know when the current is on and off.

In setting a thermostat be sure that the thermometer you use in the incubator is accurate. Some thermometers which come with incubators do not register accurately. You had better check it with a good thermometer which you know is right.

The amount of current which will be used by your incubator in three weeks' time will depend somewhat on the construction and insulation of the incubator and on the outside temperature. I would judge the consumption would be around 30 kilowatt hours.

Director Young Appraises Electricity

Dr. H. M. Young, director of the Virginia agricultural experiment station, gave a good appraisal of electricity on the farm at a meeting of the Virginia Farm Electrification Council recently. The Director spoke from his own home experience with electricity.

"We have an electric range. It does not cost as much to operate as the old coal range; and I do not have to carry out so many ashes. Also, the house keeps cleaner and the kitchen is cooler in the summer.

"In 1934 I took a trip through Germany. Most farms had electricity, but they used very little current and the cost was high. I think our increased use is the answer to the low cost of electric service.

"We need electricity. 1. To increase farming efficiency. 2. To do things on time. 3. To shorten hours of work. 4. To do more business with the same labor force. 5. To help prevent waste. 6. To help in the preparation of products for market—particularly milk and eggs. 7. To provide a more attractive place to live. 8. To improve the health of the family."

Lipstick Stains

A fairly simple way to remove distressing lipstick stains from your husband's shirt collar is to use a mixture of equal parts of household ammonia and hydrogen peroxide. Dip a small cloth in the solution and rub the stain with light, quick, short strokes, says General Electric Consumers Institute.

STICKS ON TEATS

BETTER . . . ANY SIZE or SHAPE
. MILKS Up to 25% Faster
CLEANS 50% Quicker

New Amazing
2-Piece TEAT CUP

Nothing like it! My simple, 2-piece, PATENTED cup milks up to 25% faster, cleaner, less stripings. Sticks on better any size, shape teat. Unexcelled for De Laval, McCormick-Deering, Sears, Empire, Universal, Perfection, Hinman, Conde, Ritcway, similar milkers. Style B especially designed for De Laval. No threads, rings, gadgets—no tools needed. Just 2 parts—clean 50% quicker! Take apart, reassemble in an instant. Thousands in daily use on profit-wise dairy farms. Rush Postcard today for details on my guarantee, Money-Back 30 Day Milking Trial, Free revealing Cup Circular, proof of success. State make of machine. WRITE NOW!

R. E. MAES
220 Bear Creek Farm, Marshall, Mich.

ESS BATTERY CHARGER

Operates off 115 volts, 50 or 60 cycles.

Keeps your car, tractor or electric fence 6 volt storage batteries fully charged. Not necessary to remove battery while charging.

Max. charging rate 5 amperes, automatically tapering to a safe charging rate of 2 amperes.

Write, wire or phone for complete information.

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1330 Quincy N.E., Minneapolis 13, Minn.

GRIND YOUR OWN FEED WITH NEW BELL'S MODERN HAMMER-MILL

for as little as 1/3 cent per hundred pounds. Cut Feeding cost 20% to 40% and always have fresh ground Feed for your stock. Write for Special folder.

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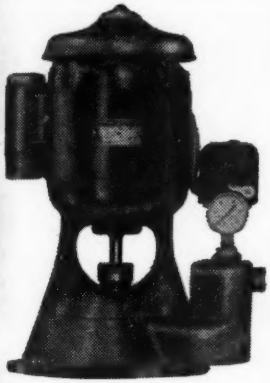
Hammer-Mills • Corn Shellers
Feed Mixers

MODERNIZE NOW!



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CONVERTIBLE WATER SYSTEMS

- SAME PUMP FOR DEEP OR SHALLOW WELLS (EXCEPT JET).
- EASY TO INSTALL AND SERVICE.
- SIMPLE, DURABLE, DEPENDABLE.

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BERKELEY PUMP COMPANY
556 Tift Ave., S.W., Atlanta, Ga.

Job-Proven!

AEROVENT FANS

Lightweight, easily installed Aerovent fans are the heart of successful hay drying systems. Learn how you, too, can do better hay the Aerovent way by requesting Bulletin HF-47. Drying equipment will again be limited this year so plan your mow-curing system now!

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Agricultural Division
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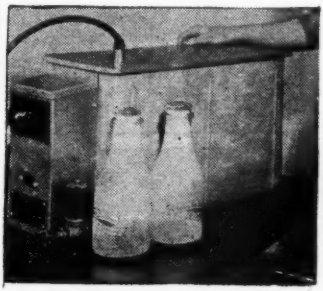
LANSING 3, MICHIGAN

What's New

These items are listed for the information of our readers. The statements are taken from manufacturer's literature. We take no responsibility for the claims made. For further information write directly to the addresses given.
—EDITOR.

Wright Automatic Home Pasteurizer

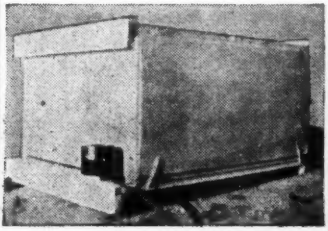
Pictured is a new electric pasteurizer that pasteurized 7 round or 9 square quart bottles of milk. Milk is



placed in the insulated metal container. A bottle of water is put in for the control. Water and current are turned on. Water and milk are heated to 143°; then timer holds it at 143° for 30 min., after which cooling water is turned on. Tests show complete pasteurization, good control of bacteria and good flavor. Price, $82.50. Made by H. E. Wright Co., 32 Cambridge St., Charlestown 29, Mass.

Bee-Lyon Hive Heater

Brand new but available for delivery is this electric bee-hive heater



made by Lyon Rural Electric Co., San Diego, Cal. It consists of a low wattage heating element and control used for wintering bees or preventing the chilling of brood by the

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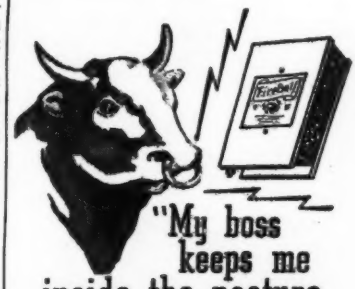

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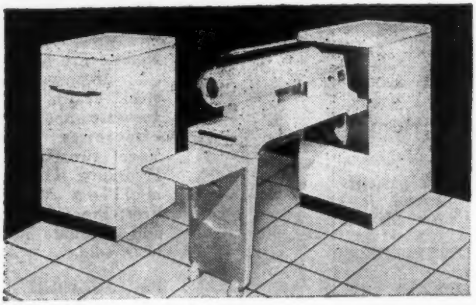
Harry T. Starnes method (See December issue). Price under $4.75 in lots of eleven. Installed without unsealing hives.

Folding Cabinet Ironer

Apex Elec. Mfg. Co., Cleveland, O., has just introduced this new ironer which folds into a cabinet 18" x 25" x 36" high and becomes part of the kitchen or laundry work surface. Easy to "fold" away. Has 26" roll, 6½" diameter, with knee and finger-tip controls, two ironing speeds and stationary position for pressing.



Milk House Heater

The illustration shows a rugged, heavy duty fan type heater made especially for heating milk houses. The 3,000 watt, 230 volt heater is embedded within a finned aluminum casting which is firesafe. The heater is 13" high x 11½" wide x 11¼" deep. May be mounted on wall or ceiling. Designed for heating 1,000 cu ft of space. Adjustable deflectors

With or without thermostat control. Electromode Corp., 45 Crouch St., Rochester 3, N. Y.

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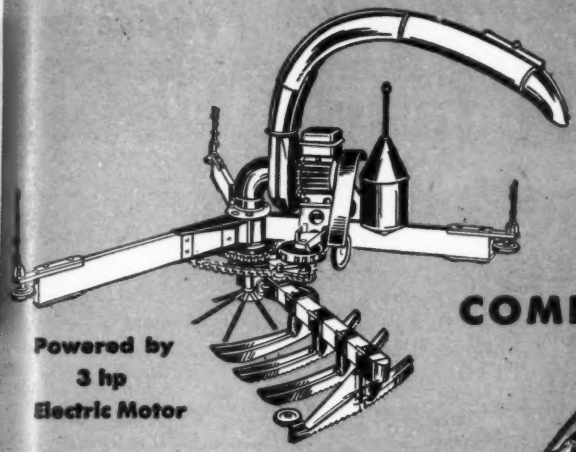
New Publications

• RECIPES FROM OLD VIRGINIA, 5½ x 8", 287 pp., paper cover, spiral binder, lies flat on table, $2. The Dietz Press, 112 E. Cary St., Richmond 19, Va. An unusual book. Compiled by the Virginia Federation of Home Demonstration Clubs. Contains over 700 recipes selected from 30,000 submitted by Club members. Every recipe signed and tested, name given. Many came from Virginia farms. Ingredients and accurate quantities listed. Instructions clear and simple. Time and degree of heat given. Famous old Virginia dishes, and some new ones.

• FARMSTEAD WIRING. 8½" x 11", 43 pp. 25¢ from Westinghouse dealers. An excellent semi-technical book for dealers, contractors and farmers. Tells of specific uses for electricity, how to plan ahead for wiring, voltage drop and carrying capacity of wires, interior wiring design and exterior distribution. Has check lists of equipment with ratings and energy consumption for every kind of farm. Valuable tables, diagrams and suggestions.

• THE HOME FREEZER HANDBOOK. 345 pp., Fabricoid cover, good paper, illus. $3.95. D. Van Nostrand Co., Inc., 250 Fourth Ave., New York. Written by Prof. G. J. Stout of Penn State College. Contains 40 pp. of instructions and plans for building farm freezers, 25 pp. on combination walk-in and freezer boxes, 5 pp. on door construction, 30 pp. on refrigeration machines and coils. Also freezer space needed, how to select a factory built freezer, 113 pp. on preparation, packaging and freezing fruits, vegetables, meats, etc., and chapters on thawing and refreezing and on selling home frozen products. Written for farm people.



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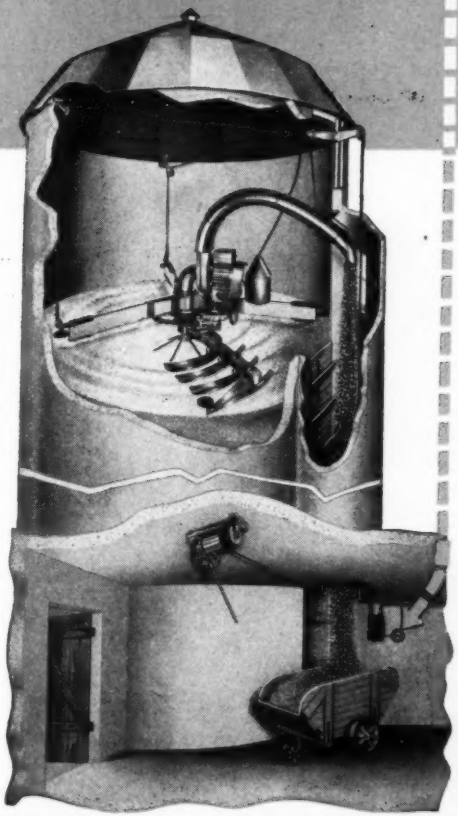

YES, that's all there's to it—flip an electric switch, set the hydraulic winch—and down comes your silage. No climbing, no hand pitching. Level skimming off top keeps silage fresh — eliminates spoilage. *Frozen silage comes down broken up ready to feed!*

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